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MYOMAS OF THE UTERUS

WITH SPECIAL REFERENCE TO MYOMECTOMY *

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To my knowledge there has been no reported case of a tumor composed of voluntary (striped) muscle fibers of the fully developed type found in voluntary muscle. It is true that rhabdomyomas occur, especially in the genito-urinary tract, but the striped fibers are always embryonic in character. True myomas are therefore of the involuntary (nonstriped) muscle, and wherever smooth muscle is to be found they are an inherent possibility. Smooth muscle has a remarkable power of hypertrophy, but this is not true of striated muscle, which reaches its maximum in adult life and appears to be incapable of greater development in later years.

Meltzer,[1] referring to Triepel's investigations, calls attention to the fact that the permanent reserve power of the voluntary muscles is comparatively small. Crile[2] and Cannon[3] have shown that under the influence of fear or anger extraordinary reserve of the voluntary muscles can be brought about temporarily. This, however, is not due to hypertrophy, but is the result of acceleration of the blood supply through increased activity of the internal secretion of the thyroid, suprarenals, and other endocrine glands, which at the same time inhibit gastro-intestinal action through the autonomic system and reduce the circulation of blood to the viscera. The increased muscular power comes about in the same way in which an engine steaming at 190 pounds' pressure would produce greater power than when steaming at 160 pounds' pressure. Increased activity of the voluntary muscles results in fatigue, owing to the acid products which accumulate, and these acids are removed from the muscular system through bases which are quickly supplied by food during rest. Stonewall Jackson, one of the greatest soldiers America has produced, by taking advantage of this fact — dividing the march into periods with complete relaxation for a short time between each period and giving the soldiers, during this time of rest, such food as he could obtain — was able to march infantry as many as 40 miles over bad roads in twenty-four hours. This obtained for them the unique appellation of "foot cavalry."

Smooth muscle, on the contrary, apparently cannot be speeded up to the same extent to meet emergencies, but must have time for muscle hypertrophy to take place. Muscle hypertrophies are work hypertrophies, such as occur from obstruction in the gastro-intestinal tract, or they depend on lack of proper stimulation, owing probably to failure of the nodal system, as shown by Keith,[4] which failure gives rise to such various conditions as cardiospasm, pylorospasm, stasis, Hirschsprung's disease, etc.

It has been shown by Cannon and Alvarez[5] that smooth muscle fiber has within itself the power of contraction independent of nerve or blood supply. A bit of intestine placed in Locke's solution will beat for hours. Our knowledge of the heart is most complete in this detail; the heart beat begins in the muscle fibers of the auricle, and the impulses are collected in the sino-auricular node — a primitive muscle-nerve type of ganglion endowed with automatic function. These impulses are carried to the ventricle through the muscle bundle of His, timing the ventricular beat. All smooth muscle, as shown by Keith, has its primary contraction or its beat, so to speak. The intestinal tract has two beats: one from fifteen to twenty times to the minute, which may act as the heart of the portal circulation (Mall), and the second, once or twice to the minute. The latter we recognize as peristalsis. The uterus has its beat, which, during pregnancy, becomes so marked that it is a diagnostic sign of value as the examiner places his hand over the suprapubic region to feel the uterine contractions.

As yet there has been no good explanation of the absence of myomas in the voluntary muscle and the frequency of these tumors in the involuntary muscle. The cause is undoubtedly connected with the primitive power of contraction of smooth-muscle fibers and their ability to hypertrophy quickly in response to demand. In this connection it is well to remember that the round, broad, ovarian and uterosacral ligaments contain smooth muscle derived from the uterine wall, and that myomas and adenomyomas (Cullen[6]) may occur in these locations.

It has been shown that 12 per cent. of white and 30 per cent. of colored women of 50 years of age have uterine myomas. Clark and Miller[7] state that at the Charity Hospital in New Orleans 50 per cent. of colored women of 35 who have not borne children have myomas of the uterus. This high percentage indicates that only a small proportion of women with myomas have symptoms, and therefore we cannot accept the opinion so frequently expressed that every myomatous

* From the Mayo Clinic.

1. Meltzer, S. J.: The Factors of Safety in Animal Structure and Animal Economy, Harvey Lectures, 1916-1917, **2**, 139-169.
2. Crile, G. W.: Acidosis and Its Dominating Influence in Surgery, Tr. Am. Surg. Assn., 1915, **33**, 419-429.
3. Cannon, W. B.: Some Relations Between Emotions and Glands of Internal Secretion, Journal-Lancet, 1916, **36**, 685-688.
4. Keith, A.: A New Theory of the Causation of Enterostasis, Lancet, London, 1915, **2**, 371-375.
5. Alvarez, W. C.: The Motor Functions of the Intestine from a New Point of View, THE JOURNAL A. M. A., July 31, 1915, pp. 388-394.
6. Cullen, T. S.: Adenomyoma of the Round Ligament and Incarcerated Omentum in an Inguinal Hernia, Together Forming One Tumor, Surg., Gynec. and Obst., 1916, **22**, 258-260.
7. Clark and Miller: Personal communication to the author.

uterus should be considered surgical. We should believe, rather, that only those myomas which are giving rise to symptoms require operation, although all women who have myomas should be examined at intervals to see that the tumors are causing no harm. It has been estimated that 30 per cent. of women with myomas die within five years if not operated on. Noble,[8] as a result of his investigation of 2,274 cases in which myomas were removed by hysterectomy, states that in 30 per cent. there were pathologic conditions present which would have led to death. We can accept these figures if the premise be changed; that is, that the lives of 30 per cent. of women who have myomas which cause symptoms would be materially shortened if the myomas were not removed. Thus we exclude that large number of women who have small myomas which are not producing symptoms.

The most common conditions indicating operation are those which result from: (*a*) hemorrhage; (*b*) degeneration of the tumor (22 per cent.); (*c*) malignant disease, usually carcinoma of the body of the uterus (4 per cent.); 10 per cent. of women more than 50 years of age who come to operation for uterine myoma have complicating malignancy; (*d*) tumors causing pressure. The large majority of patients with tumors which can be felt suprapubically belong to this group, and, with or without symptoms, should be operated on. In 30 per cent. of patients with myomatous uteri causing symptoms, the ovaries and tubes are so seriously diseased as to require operation independently of the myomas.

The diagnosis of uterine myomas in about 5 per cent. of our cases was more or less incorrect. The presence of a tumor of the ovary, either benign or malignant, usually caused the failure of differentiation, especially when small fibroid nodules, of no consequence in themselves, were to be felt in the uterus.

The use of the Roentgen ray and radium in disease is interesting and in some respects encouraging. It seems to be generally agreed that the gamma rays are the responsible agents, and that there is little difference in effect whether they are produced by radium or the Roentgen ray. Radium has the advantage of containing definite and measurable quantities. It is portable and convenient, and does not require great skill in application. The Roentgen ray requires greater skill, and should be used only by the more expert. The treatment of uterine myomas by irradiation would appear to be contraindicated in degenerating and submucous tumors, where inflammatory disease of the ovaries and tubes co-exist, and in all doubtful tumors. Forssell,[9] the leading Scandinavian roentgenologist, states that he caused the disappearance of 30 per cent. of sarcomas; but he has had no four year cures. He further states that he has many cures of superficial carcinomas, but few of deep seated carcinomas. Holding, of the Memorial Cancer Institute of Cornell, agrees with these statements and adds much to our knowledge of the subject. He calls attention to the fact that irradiation has an especially destructive effect on nuclei, and the greater the nucleation of the growth the better the effect of irradiation. He states also that irradiation will often cause healing over a cancerous surface and give a fictitious appearance of cure. Colwell and Russ[10] show that irradiation acts markedly to obliterate the capillaries, perhaps because they have only the inner endothelial coat. It does not act to a great extent on the larger three-coated blood vessels. This peculiarity accounts for the splendid results obtained by irradiation in vascular and lymph tumors, and also for the extraordinary reduction of the enlarged leukemic spleen. The splenic vessels have only the inner coat. Colwell and Russ, however, show that islands of cancerous tissue cling to the larger vessels where irradiation will seldom destroy them. Certainly one would hesitate to trust to irradiation for the cure of a probably malignant change in a myomatous uterus. Our own experience in this connection is too limited to be of value, although in the modest number of cases of all sorts in which we have used these agents during the past seven years we have had a few excellent results, but unfortunately only a few in malignant disease excepting superficial lesions.

One cannot escape from the conviction that in myomatous disease, the use of radioactive substances is destructive — nonoperative, but not conservative. In the great majority, if not all, of the cases in which the myomas completely disappear under their use, the patient loses the function of the ovaries, tubes and uterus, although the nonfunctionating remnants were left in situ.

It is urged by those who are devoted to the radioactive treatment of myomas that many patients are such poor surgical risks that they cannot be operated on, and for that reason there is a wide field of usefulness for these agents. We are told that certain patients cannot be operated on because of marked secondary anemia, yet I have operated many times when the hemoglobin was under 30 and twice when it was under 20, with recovery of the patients. In any event the condition of such patients can be improved by blood transfusion, for the practical benefits of which we are indebted to Crile. Again, we are told that certain patients cannot be operated on because of high blood pressure; but unless the high blood pressure is due to cardiorenal or thyroid disease, it does not apparently add to the operative risk. We frequently operate on patients of the uncomplicated arteriosclerotic type with blood pressure from 180 to 250 or more, and we have never had a death following the operation which we could attribute to the hypertension.

Uterine myomas are rather frequently associated with goiter. The estimation of the operative risk depends on the condition of the thyroid (goiter heart). Heart lesions of any description lead to a fear of operation. The common type of lesion is mitral, beginning in the young, especially females, as an endocarditis in connection with chorea, or "inflammatory rheumatism," and without hypertension. If well compensated, this type of lesion apparently does not increase the surgical risk. Women with bleeding submucous myomas occasionally develop heart lesions of the same character with marked secondary anemia, probably due to a similar infection, and the condition is an indication for, rather than against, operation.

Hysterectomy has been and still is the operation of choice for all symptom-producing myomas, and it has much to commend it. In patients above 40 years of age, and especially those with degeneration of the tumor, this operation is indicated. Supravaginal hysterectomy has a definite technic which has been so

8. Noble, C. P.: Fibroid Tumors of the Uterus: A Study of the Degenerations and Complications in 2,274 Consecutive Cases; Including 337 Cases of the Writers; also a Study of 4,880 Consecutive Cases in Their Relation to Carcinoma and Sarcoma of the Uterus, Jour. Obst. and Gynec., Brit. Emp., 1906, **10**, 436-477; id., The Journal A. M. A., Dec. 8, 1906, p. 1881-1886.

9. Forssell: Personal communication to the author.

10. Colwell, H. A., and Russ, S.: The Effects of X-Rays upon Various Organic Substances, Arch. Middlesex Hosp., London, 1911, **27**, 63-70.

thoroughly and carefully worked out in the past twenty years that it has become the standard operation. Preserving the cervix renders the operation easier and safer, but the cervical remnant has no function and two unfortunate propensities: First, it leaves the patient with a liability to cancer — an average liability, according to our experience, although Winter and others believe that in myomatous disease the liability is increased — and, second, it is the cause of the large majority of those sometimes troublesome vaginal discharges which go by the name of leukorrhea, due to subsequent disease of the mucous glands of the cervix. For this reason, in all cases of erosion, cystic degeneration or other disease of the cervix, we remove the cervix with the body of the uterus, provided it can be done without unduly increasing the risk of the operation.

There has been a great deal of difference of opinion as to whether or not the ovaries should be saved. It would seem, however, that to remove the normal ovaries merely because we are doing a hysterectomy is an unwarranted mutilation. Norris and Clark's[11] investigations show that saving the ovaries materially reduces the unpleasant physical and nervous effects which often follow hysterectomy. That the ovaries have an internal secretion as well as the function of ovulation is well known, and in the young this internal secretion, even from ovaries in which the function of ovulation never occurs, causes at least development of the feminine characteristics.

The internal secretion of the ovary and testicle also has to do with the closure of the epiphyseal lines in adolescence; and removal of these organs in the young leads to late closure of the epiphyseal lines and increased growth of the long bones which, in connection with a hyperactive pituitary secretion, produce the tall spindle type of giantism. That the function of the ovaries is entirely independent of nerve supply is shown by the experience of Tuffier,[12] who, in operating for pus tubes, removes the ovaries and tubes, sterilizes the ovary either by passing it through an alcohol flame or by dipping it in tincture of iodin, and implants it in the abdominal wound just outside the peritoneum. For a few months after operation the patient shows marked evidence of beginning menopause; in from four to six months these symptoms disappear, and menstruation reappears and continues in a normal manner. Only autografts, however, have this property; in Tuffier's experience homografting and heterografting of ovaries was a failure. Beatson[13] of Glasgow found that in some hopeless cancers of the breast, removal of the ovaries produced an extraordinary effect on the cancer, several patients of this description being apparently cured. Beatson is a most distinguished as well as conservative surgeon, and his results, which have been duplicated by others, well show the remarkable effect of stopping the internal secretion of the ovaries.

We have been able to save one ovary in more than 50 per cent., and both ovaries in more than 25 per cent. of all the hysterectomies we have done for myomatous disease. From the standpoint of conservation of the ovary, hysterectomy is preferable to radium and the Roentgen ray, since when thus effectively treated the ovaries are destroyed. Acknowledging, as we must, the great benefits which have accrued to woman through hysterectomy, we cannot blind ourselves to those physical and nervous changes which sometimes follow, especially in younger women. It would be interesting to know what percentage of divorces have had their origin in this operation. It is not that hysterectomized women become coarse, although they often gain in weight, but certain physical and nervous changes take place which may result in unhappiness. The noblest instinct of woman, that of motherhood, is at hazard. Because of the ease and the surgical certainty of hysterectomy, have we not sometimes too quickly advised and practiced a mutilating operation? I regret to say that we now occasionally see a young woman in whom a condition equivalent to hysterectomy with removal of both ovaries has been brought about by radium or the Roentgen ray. To one who takes a view of the whole situation, myomectomy must present itself as the only truly conservative procedure, and becomes the operation of choice for a large number of patients, provided always it can be done without an increase of risk and with reasonable certainty as to cure.

Myomectomy for myomas of the uterus has not been a popular operation. It has been urged against it, first, that the mortality of the procedure itself is higher than that of hysterectomy, and, second, that more tumors would develop and necessitate hysterectomy later. As to the mortality: From Jan. 1, 1891, to Sept. 1, 1916, we have done 504 consecutive myomectomies with four deaths in the hospital, a mortality of 0.8 per cent. Counting as a death from the operation every patient who died in the hospital following myomectomy, without regard to cause or length of time after operation, certainly this mortality compares favorably with that of hysterectomy. As to the second objection, only five patients required hysterectomy later for any cause.

It must be taken into consideration, however, that the patients whom we subjected to myomectomy were in a way selected cases. Myomectomy was not often done in those over 40, and it was not frequently done after the age of 35 unless the conditions were such as to make it safe. On the contrary, it was done for the majority of patients with myomas who were under 35 years of age, and for practically all under 30 years. As the tumors which require operation are much more frequent after the fortieth year, it can be readily seen that we have been conservative in choosing cases for myomectomy.

Myomectomy is a more difficult operation than hysterectomy, because the technic must be varied according to the character, situation, size and number of tumors. But myomectomy does not present greater difficulties than can be easily mastered by the experienced surgeon. I have previously described[14] the technic of this operation, and have found it necessary to make but little change since.

Fourteen patients were pregnant at the time the myomectomy was performed, and the majority went to term and were delivered of living children. When it is considered that in the latter group the tumors were degenerating with acute symptoms, and that in a large proportion indications of spontaneous emptying of the

11. Clark, J. G., and Norris, C. C.: Conservative Surgery of the Pelvic Organs in Cases of Pelvic Peritonitis and of Uterine Myomata, with the Review of the Immediate and After-Results of 299 Cases, Surg., Gynec. and Obst., 1910, **11**, 398-413.

12. Tuffier: Personal observation, Mayo, W. J.: A Visit to Some of the Hospitals and Surgical Clinics of France, Northwest. Lancet, 1911, **31**, 405-411.

13. Beatson, G. T.: On the Treatment of Inoperable Cases of Carcinoma of the Mamma: Suggestions for a New Method of Treatment, with Illustrative Cases, Lancet, London, 1896, **2**, 104-107; 162-165.

14. Mayo, W. J.: Some Observations on the Operation of Abdominal Myomectomy for Myomata of the Uterus, Surg., Gynec. and Obst., 1911, **12**, 97-102.

uterus were present at the time of the operation, it is remarkable that the disturbance so frequently quieted down without premature expulsion of the child. In not a single instance have we been obliged to do hysterectomy on the pregnant myomatous uterus with a nonviable child.

Twenty-four of our 504 myomectomized patients have had living children since the operation, and seven have had two or more. Thirty-eight living children to date following myomectomy is a strong argument for the conservative operation. Five others are normally pregnant now.

From this investigation as to actual results covering a period of twenty-five years, it is evident that the operation of myomectomy has not received the attention it merits. We should bend every effort to improve the technic and further the indications for this operation, the only truly conservative procedure for myomas of the uterus, an operation which removes the tumor and leaves the patient as she would have been had she never possessed it.

THE FUNCTIONAL CAPACITY OF THE STOMACH

AS A BASIS FOR JUDGING THE VALUE OF ANY METHOD OF SURGICAL TREATMENT *

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The value of any treatment, especially when it involves surgical methods, is not based at the present day entirely on anatomic results. Anatomic structures, whether conforming to the normal or resultant from new relations produced during operation, are of value only in terms of physiologic function. The nearer the functional result approaches the normal after operation, the better has been the method of treatment; and the more closely the functions are carried out along normal physiologic paths, the less disturbance is manifested in the complaints of the patient until the body economy becomes accustomed to the new physiology.

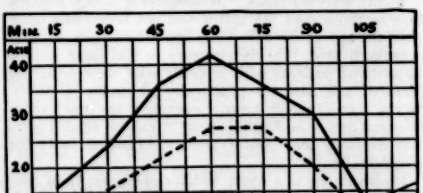

Fig. 1.—Fractional test meal, Case 1: solid line, total acidity; broken line, free acidity.

This paper will outline the methods which we have been using, which are capable of reflecting scientifically and accurately the state of the various functions of the stomach at any given moment. The picture obtained by correlation of the various facts so obtained will in turn reflect the total physiologic effort of the gastric function. It will be shown, also, that these methods are applicable after any operative procedure, and when so employed give reliable data on which the functional result of the operative procedure can be judged.[1] In the latter aspect these methods will find their chief value.

These methods combine some tests in common use for many years, together with several which, although known for many years, have only recently assumed the prominence which they should have. In a general way these have to do with the digestive and motor functions of the stomach.

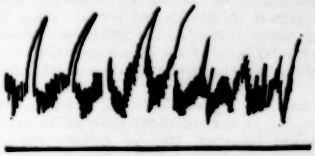

Fig. 2.—Kymographic record, Case 1.

In estimating the digestive activity of the stomach, the knowledge obtained from any one test meal has not satisfied us. On this service there has been developed a routine which is designed to follow the ordinary habits of most normal persons and which furnishes, to our mind, a correct picture of this function.

The cycle is begun in the morning. The content of the stomach found after the night's rest is extracted. Immediately thereafter a test breakfast is given consisting of a cup of tea (6 ounces) and one roll (Ewald test breakfast). The residue remaining at the end of one hour's time is extracted. The midday meal of the same day consists of the Riegel[2] test meal. Six hours later the residue is extracted. At each of these extractions the attempt is made to empty the stomach completely.

The residues obtained are examined grossly, chemically and microscopically, and the facts are tabulated in accordance with the charts shown in the case reports following.

An entire digestive period is then studied in accordance with the fractional method lately emphasized by Rehfuss. This is necessary as the information obtained in the ordinary test meals reflects the conditions in the stomach at any given moment arbitrarily chosen. The fractional method amplifies this by furnishing information continuously over an entire digestive period, regarding the character of the secretions of the stomach and the length of the period of secretion, as compared with digestion and with the emptying capacity of the stomach. Information is also obtainable as to whether or not duodenal or small intestinal contents are regurgitated backward into the stomach at any stage of the digestive period; and, when this does occur, the relative time of its appearance can be noted and any influence which this may have on the digestive activity can be observed.

It can be readily appreciated that, of all these tests, the most important is the study of an entire digestive period by means of the fractional method. The

*From the surgical service of Dr. A. A. Berg, Mount Sinai Hospital.

1. Wilensky and Crohn: Tr. Am. Gastro-Enterol. Assn., May, 1916; Am. Jour. Med. Sc., to be published.
2. We use a modified Riegel test meal consisting of a plate of bouillon, about 200 gm. of white meat of chicken, about 150 gm. of mashed potato, and two slices of white bread.

results of this method can be plotted graphically, and a curve is then obtained giving a visual description of a period with which subsequent examinations can be compared.

The motor function of the stomach is next investigated. For this purpose two methods are available: (a) the Roentgen ray examination of the contrast meal filled stomach, and (b) the kymographic method recently emphasized in purely physiologic work by Cannon and his collaborators[3] and by Carlson and his associates.[4]

In the aspect discussed in this paper, no attempt is made to indicate the relative value of the Roentgen ray as a method of precision in the diagnosis of gastric or duodenal lesions. In this communication only those facts made evident by Roentgen ray study which have a bearing on the function of the musculature of the stomach wall will be indicated.

The smooth muscle planes of the stomach are distributed, first as a churning and propulsive mechanism in the wall of the stomach, and, secondly, as a valve formation at both the entrance to, and the exit from, the stomach—the cardiac and pyloric sphincters. Physiologically the more important of the latter two is the pylorus. The information obtainable by means of the Roentgen ray in regard to these three parts of the motor function can be summarized thus:

1. *The Action of the Cardia.*—No abnormality in function is usually found unless some definite organic

Fig. 3.—Kymographic record, Case 2.

lesion is present directly at the sphincter or so closely adjacent as to form a source of irritation.

2. *The Action of the Musculature in the Wall of the Stomach.*—This includes the character of the individual contractions and especially the coordination of these in the total muscular effort; the tone of the muscle, that is, the manner in which the stomach contents are grasped; the segmentation of the stomach into fundus and antral portions, and the rapidity with which the food is passed into the pyloric chamber. The time of total emptying of the stomach is also noted.

3. *The Action of the Pylorus.*—A normally acting sphincter at the exit from the stomach is imperative for a normal physiology. This has become evident as a result of some studies which we have made on stomachs subjected to resection with and without retention of the pylorus.

The technic employed in obtaining kymographic observations follows closely that described by Cannon and Carlson. Observations are made on a fasting stomach. In certain cases, however, it may be of advantage to have these tests made on the stomach containing food.

Information from this source can be summarized thus, according as it concerns:

1. The tonus of the musculature.
2. The presence or absence of tonus contractions.
3. The presence or absence of hunger contractions.
4. The muscular coordination.
5. The intragastric pressures and their variations.

3. Cannon, and Cannon and Washburn: Am. Jour. Physiol., 1911 and 1912; Harvey Lecture, Dec. 6, 1911.
4. Carlson, Carlson and Ginsburg, Patterson, Luckhardt and others: Am. Jour. Physiol., 1912, 1913, 1914 and 1915.

Information obtainable by the Roentgen ray is complementary to that obtained by kymographic methods. The two together give adequate conceptions of the action of the stomach musculature.

The practical application of these methods is shown in the accompanying case reports.

REPORT OF CASES

CASE 1.—*Record of a case with gastric symptoms in which no gastric lesion was demonstrated at operation.*—Hospital

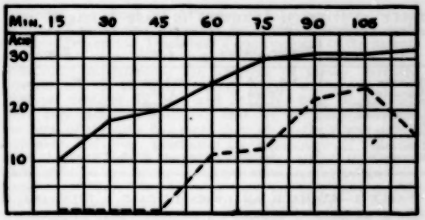

Fig. 4.—Fractional test meal, Case 3: solid line, total acidity; broken line, free acidity.

No. 160266. There was a six months' history of epigastric pain occurring after meals with frequent vomiting. There was a loss of 35 pounds in weight. The physical examination was negative except for a slight amount of tenderness in the epigastrium. The facts revealed by the functional study are given in Table 1 and Figures 2 and 3. Roentgenoscopy revealed active peristalsis, good motility, and the stomach empty in four hours.

TABLE 1.—STOMACH ANALYSES IN CASE 1, DECEMBER, 1915

	Fasting Content	Ewald	Riegel
Quantity	None	40 c.c	None
Appearance		Brown	
Food residue		Slight	
Lactic acid		0	
Blood		0	
Free acid		35	
Total acid		65	
Microscopic		Negative	

These examinations showed that the functions of this patient's stomach were within the normal ranges. It was possible to say definitely that there was no functional disturbance, and it was not surprising when the laparotomy showed no anatomic lesion of the stomach or duodenum.

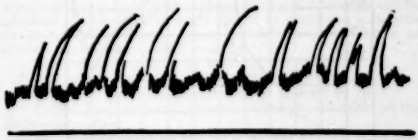

Fig. 5.—Kymographic record, Case 3.

CASE 2.—*Case with gastric symptoms and demonstrable lesion at operation.*—A middle aged man for two years had had epigastric pain occurring after meals. The pain was also especially intense during the night. Vomiting had never occurred. There was a loss of 50 pounds in weight. Here, too, the physical examination yielded nothing but a slight amount of epigastric tenderness. The results of the functional studies are given in Table 2 and Figure 3. Roentgenoscopy gave evidence of an incomplete stenosis of the pylorus with marked atony and gastrectasia.

The functions of this man's stomach had been so deranged that it was not possible to perform some of the tests, owing to his immediate vomiting (fractional method and Riegel meal). The clinical diagnosis was incomplete pyloric stenosis with gastrectasia. On several occasions the kymographic tracing demonstrated an atonic condition, and when at operation a large crateriform ulcer was found on the posterior surface and lesser curvature adherent to the underlying pancreas, this was immediately explained. There was no true pyloric stenosis. The true conception was that of a paralytic condition induced by the presence of this large inflammatory lesion

TABLE 2.—STOMACH ANALYSES IN CASE 2, MARCH, 1916

	Fasting Content	Ewald	Riegel
Quantity	500-1,000 c.c.	420-1,000 c.c	Not made
Appearance	Yellow	Yellow	
Food residue	Large	Large	
Lactic acid	0	0	
Blood	0	0	
Free acid		22	
Total acid		37	
Microscopic	Sarcinae, raisins and old food detritus.		

TABLE 3.—STOMACH ANALYSES IN CASE 3, JULY, 1915

	Fasting Content	Ewald	Riegel
Quantity	27 c.c.	150 c.c.	60 c.c.
Appearance	Clear fluid	Light brown	Brown
Food residue	0	Little	0
Lactic acid	0	0	0
Blood	0	0	0
Free acid	13	15	0
Total acid	30	43	27
Microscopic	Negative	Negative	Negative

in the body of the stomach. This, too, explained why the man had not vomited before he came to the hospital.

CASE 3.—*Functional study after operation with full recovery.*—Hospital No. 155381. A man, aged 34, had been operated on for an ulcer near the pyloric sphincter, a gastro-enterostomy having been made by suture with unilateral pyloric exclusion by the string method. The results of the study of the functions of the stomach made after full convalescence are given in Table 3 and Figures 4 and 5. Roentgenoscopy revealed good peristalsis, the pylorus (exclusion) closed, the stoma patent and efficient, and the stomach empty in four hours.

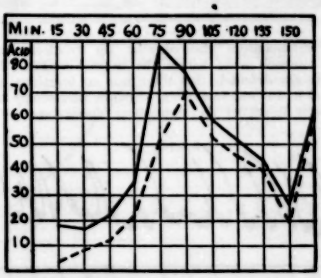

Fig. 6.—Fractional test meal, Case 4: solid line, total acidity; broken line, free acidity.

Symptomatically the patient was cured; physiologically the functions were within the normal ranges; the result, therefore, is excellent from every point of view.

CASE 4.—*The functional result after operation with a development of postoperative symptoms.*—Hospital No. 160857.—A man had had an ulcer in the first portion of the duodenum for which the same surgical treatment had been carried out as in Case 3. Some time later the patient developed a recurrence of some of his former symptoms, and when the functions of his stomach were then studied, the results given in Table 4 and Figures 6 and 7 were obtained. Roentgenoscopy revealed fair peristalsis, the pylorus open (exclusion), the stoma patent, and the stomach empty in six hours.

Aside from the symptomatic result, the findings show that the stomach functions are not what they should be. The cause for this patient's postoperative symptoms may not be a recurrence of the original lesion or a reappearance of new

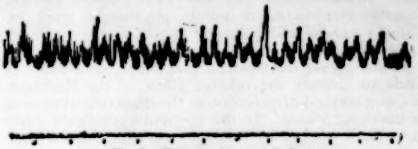

Fig. 7.—Kymographic record, Case 4.

similar lesions, but may be due entirely to the disturbed physiology. As pointed out in a former paper[3] these physiologic disturbances are prolific in the production of postoperative symptoms.

COMMENT

These are the methods used in the study of those cases reported at the meeting of the American Gastro-Enterological Association in May, 1916. The cases cited here are to be considered only as examples, and they demonstrate the value and limitations of these methods in determining the value of any form of treatment. Their application will be most important in those gastric cases treated by surgical methods in which a recurrence of some or all of the anteoperative symptoms occur or in which new postoperative symptoms develop. These determinations then form reliable criteria on which a judgment can be made as to

TABLE 4.—STOMACH ANALYSES IN CASE 4, NOVEMBER, 1916

	Fasting Content	Ewald	Riegel
Quantity	60 c.c.	200 c.c.	60 c.c.
Appearance	Light brown	Light brown	Light brown
Food residue	None	Moderate	Little
Lactic acid	0	0	0
Blood	0	0	0
Free acid	0	15	0
Total acid	16	50	16
Microscopic	Negative	Negative	Negative

whether the postoperative symptoms originate on a functional or anatomic basis. Finally, when such judgment is made, these methods in the functional cases form reliable guides for the rational treatment of the symptoms, and in turn form trustworthy methods for judging the good or bad effect of the particular treatment used.

3. Wilensky, A. O.: Am. Jour. Med. Sc., to be published; Tr. Med. Soc. County of New York, Med. Rec., New York, 1916, 90, 389.

Community Nurses.—The experience in 2,629 communities scattered over the entire nation has been that whenever a public health or community nurse goes into a community she is opposed or unaided by certain physicians. The experience in the same 2,629 communities is that sooner or later the doctors realize that the nurse can do for their communities what they themselves are unable to do. She can carry education into the very souls of people. Education, after all, is the solution of all our public health problems. The physician who opposes or refuses to help the public health nurse is fighting a losing fight against public health. You may not feel that way about it now, but you will.—*Health News*, Illinois.

A HEALTH EXAMINATION AT SCHOOL ENTRANCE*

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In 1876, Dr. Clarence J. Blake of Boston presented a paper before the International Medical Congress at Philadelphia in which he stated clearly and emphatically the need of medical inspection of schoolchildren; but for nearly twenty years this wise recommendation was ignored, the health of schoolchildren was neglected, school diseases were uncontrolled, epidemics played havoc with school attendance, many children died from preventable causes, and many more suffered from physical defects and insanitary conditions. It was not until a series of epidemics had occurred in Boston that, finally, in 1894, Boston established a regular system of medical inspection for the public schools. Slowly other cities followed until now nearly all of the large cities and many of the states require health inspection to a greater or less degree.

During the last seven or eight years the need for health inspection has been specially recognized, school nurses have been employed with excellent results in many cities, the need for caring for the teeth has been recognized and dental clinics established, and the importance of mental hygiene and the hygiene of instruction is now being emphasized. In some places remarkable success has resulted from the methods of health inspection adopted. The excellent results of this movement have been clearly shown in the valuable summary recently published by Drs. Gulick and Ayers,[1] and widespread interest was demonstrated at the International Congress on School Hygiene held in Buffalo in 1913.

The work, however, is still far from being adequate even in the cities in which the best plans are in operation, and the inefficiency of the medical inspection in many places has given critics an opportunity to make serious charges against the whole plan. Many declare that no good has come from it, and that, in many cases, harm has resulted. Careful students of the subject like Dr. Gulick have noticed the serious defects and pointed out the need for more adequate provision for such inspection.

The time has come when if health inspection is to succeed it must be carried farther and be made more adequate. The concrete methods by which this may be done can be devised by those actually engaged in the work; and more thorough-going and satisfactory methods should be adopted so far as local conditions will permit. One general need should be emphasized at the present time: If health inspection is to be fully successful in any community, the support of the general public and the cooperation of teachers and parents is necessary. One cannot expect the best results when teachers do not know that there are medical inspectors, or when parents refuse to permit their children to be inspected. The next step in health inspection may well be an attempt to gain intelligent cooperation from parents and teachers.

The problem of gaining this cooperation is a difficult one, and the process is likely to be slow. Teachers should have a different training, parents must be educated; but the beginning of such education, I believe, may well be made at the present time, and the method I would suggest is that of a thoroughgoing physical and mental examination of each pupil on entering school life. This examination should be conducted by the health inspector with the aid of the teachers and one or both of the child's parents.

[Under the head of "Preschool Life and the School Beginner," the author discussed Dr. Thiele's[3] biologic study of school beginners. Thiele sent a questionnaire to the parents of 5,538 children in the public schools at Chemnitz. He endeavored to determine the influence of family, heredity, disease, etc., on children entering school at the age of 6; 16.81 per cent. of the boys and 23.27 per cent. of the girls were only children; 26.05 per cent. of the boys and 11.21 per cent. of the girls had more than six brothers and sisters. Bohannon and Neter emphasize the significance of being an only child. Thiele finds this condition related to disease. Only children are better protected from contagion and are better nourished. They learn to walk and talk more quickly than others and are more likely to be precocious.

The author then considered the age and development of the child on entering school. The time when the child should enter school depends on its physiologic age and the relation of the home to the school. Beik[4] has shown what is the normal physiologic age for school entrance. The condition of the home may be such that the child may be better off attending school, even if below the proper age. Winch[5] finds that there is little gain in having children enter school before the age of 5 or 6 years. Ayers[6] found that children entering school at advanced ages made slightly more rapid progress than those beginning earlier. Steinhaus[7] holds that the completed sixth year is the best time for entering school. Camerer, Monti, Lange and Gundobin find that the majority of boys at the completion of the sixth year are 110 cm. in height, and that the rate of growth in the sixth year is 5 cm. Girls average 1 cm. smaller. Quirsfeld found the height of children entering school to vary from 12 to 27 kg.; 75.4 per cent. of the children weighed 19.5 kg. Gundobin found the average circumference of the head for boys of 5 years to be 50.1 cm., and for girls the same, while the average for boys of 6 was 50.8 and for girls 49.4. Monti found the average circumference of 51 cm. Steinhaus suggests the following standards: The height of children on entering school should be at least 110 cm., weight 18.20 kg., chest circumference from 52 to 54 cm., and head circumference from 49.5 to 50.5 at the end of the completed sixth year. Selter shows that children entering the gymnasium are from 4 to 6 cm. taller than children entering the people's schools. The consensus of opinion is that children should not attend school before the completed sixth year, and that children who are imperfectly developed, weak or diseased should be excused from entering school at that time. Only those children who have sufficient strength and development to make them capable of standing the confinement and doing their work without injury to health should be admitted. While further study should be made and standards established for different types, the following will serve as minima for children in this country:

1. The height should be at least 115 cm.
2. The weight should be at least 20 kg.
3. The chest circumference should be at least 53 cm.
4. Children on entering school should have all four of the sixth-year molars.
5. Standards should be the same at this age for boys and girls, although for girls a little less may be permitted regarding height and weight. The presence of all four sixth-year molars should be required of both sexes and for all types.]

* An address delivered on acceptance of the office of president of the Massachusetts Society for Mental Hygiene. On account of lack of space, considerable statistical matter has been omitted which will appear in the reprints, copies of which can be obtained on application to the Massachusetts Society for Mental Hygiene, 313 Ford Building, Boston. A more detailed paper on the same subject can be found also in the Pedagogical Seminary, 1914, **21**, 219.

1. Gulick, L. H., and Ayers, L. P.: Medical Inspection of Schools, New York, Survey Associates, 1913, p. 224.

3. Thiele, A.: Versuch einer Biologie der Schulanfänger, Ztschr. f. Schulgsndhtspflg., 1913, **26**, 377, 827.

4. Beik, A. K.: Physiological Age and School Entrance, Ped. Sem., 1913, **20**, 277.

5. Winch, W. H.: When Should a Child Begin School? Educ. Psy. Monographs, Baltimore, Warwick & York, 1911, p. 98.

6. Ayers, L. P.: The Relation Between Entering Age and Subsequent Progress Among Schoolchildren, Education, 1912, **32**, 325; Medical Inspection of Schools, Monroe's Cyclopedia of Education, New York, the Macmillan Company, 1913, **4**, 182.

7. Steinhaus, F., et al.: Welche Anforderungen sind in körperlicher und geistiger Beziehung an den Schulneuling zu stellen? Ztschr. f. Schulgsndhtspflg., 1913, **26**, 16, supplement.

SCOPE OF THE EXAMINATION

The suggestions of the German physicians in regard to school entrance are excellent, but in my opinion we should go much farther than this. The following things seem desirable:

There should be a physical examination participated in by the teachers and parents as well as by the school physician, and this examination should include the following: (1) a test of physiologic age; (2) a test of psychologic age; (3) a test of the general health conditions, and (4) a history of the morbidity of the individual child.

1. The test of physiologic age may at first be confined to the things already mentioned; but probably in the near future, after further studies of the biology of the school beginner have been made, it will be possible to note other important conditions and determine more accurately the stages of physiologic development. Roentgenograms showing the development of the epiphyses of the bones, and tests of the range of the voice, and of the development of the eye and other organs may probably be included.

Studies at Clark University as well as elsewhere have shown the advantages of physical tests not usually made, such as those for determining the vital index, that is, the lung capacity divided by the weight; and the cardiovascular index, that is, the systolic blood pressure multiplied by the pulse, plus the diastolic blood pressure multiplied by the pulse, to show the total cardiovascular energy expended;[8] tests of the ability to form and break down conditioned reflexes, by methods similar to those of the Russian school of Pawlow; tests of motor ability,[9] and studies of the physical type of the individual,[10] to determine not only whether one is of the carnivorous, herbivorous or neutral type, but also, as far as possible, to show the general type as regards growth, and the like.

2. Especially important is the determination of the child's stage of mental development at the beginning of school life. This is important not merely to determine whether or not the child is fitted to enter school, but also to give a record which may help the teacher and serve for future reference. Most important is observation of the child's behavior, especially on the playground. An attempt should be made to learn something of the child's character and disposition. A helpful plan would be to have a large playroom with many toys and simple pieces of apparatus for physical exercise, and to have all the children left in this room when not passing the special examination. A competent observer placed in this room would make records of the spontaneous behavior of each child.

Something in the way of special tests may be given. These may be along the line of investigations made by President Hall, Binet, Yerkes, and many more recent workers, including a test of the contents of the children's minds, their interests, as they can be roughly determined, their ability in using the knowledge they have, etc.

Something like the Binet-Simon tests for the sixth year can be used: distinguishing right from left; finding obvious omissions in pictures; counting thirteen pennies; some simple tests of comprehension, like answering the question, "What's the thing to do if it is raining when you start to school"; answering the question, "Is it morning or afternoon?" or similar problems.

The results of these tests should be controlled by the direct observation of the children at the time of the examination, especially, as already suggested, observation of their behavior in spontaneous play; and by reports of parents in regard to the behavior of the children at home, their knowledge, their interests, their ability to get on with other children, their moral character and disposition, their faults, their virtues, and the like.

The tests of psychologic age will naturally be supplemented by other tests, especially perhaps of motor ability and the ability to form practical judgments in new situations.

Especially important is the opportunity given by the examination at school entrance to determine the peculiar children — the various classes who are now called psychopathic personalities, defective delinquents, and the like, and the children who are precocious and supernormal, the especially bright children, as well as those who are dull and subnormal. The record of such peculiarities is of the greatest importance for the immediate adjustment of school work and for future diagnosis of the defective and abnormal.

In the tests of psychologic age, also, attention may well be given to habits of observation, of attention, association and the like, calling the attention of both parents and teachers to habits of health as of fundamental importance. This physiologic examination should include the determination as far as possible of the mental type to which the individual belongs.

Probably less can be accomplished in the way of determination of the child's type of imagery than many psychologists have supposed; but still more important than this is probably the determination of the learning type. Although no adequate experimental studies have been made, so far as I am aware, observation seems to show pretty clearly that there are two marked types of learners, one type which learns easily by instruction, by hearing and seeing what others do, and from definite directions and demonstration, that is, a type which learns easily by the usual didactic methods of the school; and, on the other hand, another type which learns chiefly by doing, and this by one's own method. The ordinary methods of the school, however, are usually adapted to the child who learns by hearing, by instruction; and the individual of the doing type is at great disadvantage and often appears dull. It is of the utmost importance that these two types be distinguished as early in school life as possible, and the beginning of diagnosis should be at the entrance of school life.

The test for psychologic age can be carried much farther and be made much more adequate when more careful investigations have been made bearing on this subject; for example, after the promising investigations by Krasnogorski, and others by Pawlow's methods have been perfected, it probably will be desirable to make tests of the conditioned reflexes, memory reflexes and the like. Tests of association, of the various learning types, of voluntary action, inhibition, and of mental attitudes may all be ultimately included.

3. The test of the health should be primarily to determine the general physiologic condition, and also, more concretely, the condition of the teeth, the throat and the nasopharynx, especially noting the condition of the tonsils, the presence or absence of adenoids, the

8. Clerk, F. E.: A Study of the Cardiovascular Index in Elementary School Children, Ped. Sem., 1916, **23**, 135.

9. Douglas, A. A., and Dealey, W. L.: Micromotion Studies Applied to Education, Ped. Sem., 1916, **23**, 241.

10. Lewis, C. B.: Adolescent Physical Types, Ped. Sem., 1916, **23**, 295.

occlusion of the teeth, and the condition of the eyes, ears, etc. When the full importance of health as a primary aim in early education is understood, then time will be taken in each individual case for every desirable test, whether it be the Wassermann test, the von Pirquet test, or something else, or all together.

4. The morbidity history of all diseases that the child has had should be recorded as far as possible, and it especially should be noted whether or not the child has had rickets, scrofula or any form of tuberculosis, convulsions, measles, scarlet fever, whooping cough, diphtheria, chicken pox, mumps, etc., and such a record for each child should be kept in the school or by the medical inspector or by the board of health.

This morbidity test should include also a very careful noting of bad habits, not only habits obviously detrimental to health, biting the finger nails, sucking the lips, placing the tongue in abnormal positions, and other habits which tend to produce dental defects, but also any bad habits as regards cleanliness, chewing the food, digestion, excretion, and bad habits of attention, association and the like.

By such observations and tests it is possible not only to determine whether children are fitted to do the work of the school, but also to find data in regard to the children that will enable the teachers to adapt in large degree the occupations of the school to the character of the individual pupils. If children cannot pass tests like those mentioned, and if they show considerable mental weakness and inability to do the simple tasks which are likely to be required in the first grade of the school, they should be kept out of school for another year, and placed in kindergartens or the like, according to local conditions.

SIGNIFICANCE OF THE EXAMINATION

The entrance on school life presents an opportunity for hygiene which has been strangely neglected. An examination of school beginners as regards physiologic development and general physical condition has vast possibilities. It gives opportunity not only to determine whether a child is in condition to do the school work without injury to health, but also to educate the parents; and, further, it gives opportunity to have the child put as far as possible into good physical condition. We have already recognized the right of the state in matters pertaining to health. We insist, for example, that a child shall be vaccinated before entering school. We insist that a child shall not come to school with a contagious disease. There is a feeling, however, on the part of many, that to go beyond this is an interference with individual rights and the prerogatives of the home. This is a survival of the old idea that the function of hygiene is negative. With the new view of the positive function of hygiene, there seems to be equally good reason for requiring such a condition of health and development as will enable the pupil to do the work of the school efficiently and without injury to health.

Plenty of time should be given for this examination. It should be in the nature of a consultation of experts. The school physician should be not only a medical expert, but also an expert in school hygiene. The teacher, if with some professional training, is to some extent an expert in school work. The parents, having watched and trained their own children, are in a certain sense experts in regard to them.

Here in this problem of school entrance is to be found, if not the key, at least the strategic point of attack for many of the pressing practical problems of school education today. Such a thoroughgoing examination conducted by the school physician, parents and teacher would be of great value pedagogically as well as hygienically.

For example, it is pointed out by the wise that a better cooperation between the home and the school is necessary. Here is the place to begin cooperation. In a tactful examination such as that mentioned, if made by fairly intelligent school physicians and teachers, cooperation of parents could be gained in a natural way. By consulting the parents in this examination in regard to the peculiarities of their child, the diseases the child has had, and his general condition of health, the expert character of the parent would be recognized and an attitude of cooperation would easily be aroused.

This problem is of fundamental importance, because it is only by cooperation of the home and the school that we can satisfactorily solve the problems of adapting school work to the capacities of the children, of proper care for their health, and of vocational guidance.

The evil of the present lack of cooperation between the home and the school has often been pointed out, and it is illustrated by the attitude of teachers as well as that of parents. When a subject like overpressure, for example, is discussed, we teachers are apt to say that the conditions in the home are responsible; that it is the work children do before coming to school which causes overpressure. The home, not the school, is to blame — as if that settled anything. When there is illness or inefficiency among schoolchildren, again it is the home we blame: conditions are more hygienic in the school than in the home. Such shifting of responsibility is easy; and all this is largely true. But reflect for a moment on a very obvious truth: Most of these parents a few years ago were pupils in the schools. In twenty-five years, children entering school now will be the parents.

Again we say the parents need to be educated. This is the burden of much of the pedagogic literature of today. The common lamentation is that we cannot solve the problems of the school until the parents are better educated. True enough; but how shall we begin to educate them? A better way could hardly be devised than an entrance examination for the children in which the parents could participate. Such an examination would educate the parents not merely because physician and teacher would have opportunity to give advice, but far more because parents would learn by means of it that school work is not an occupation to be taken up lightly and dropped again when something lucrative is offered for the children, but a serious matter, requiring health, and a degree of physical and mental development. Entrance on school life is too easy. Parents would prize the opportunities and privileges of the school more if it were harder to obtain them. Thus the time and inconvenience required for the examination would be a distinct advantage because an important means of educating the parents.

One great cause of the inefficiency in school work and the lack of adaptation of school occupations to individual capacity and health is the fact that we do not begin right. An examination like that described would be a good beginning; it would go far toward developing the right attitude in parents toward the school; it would acquaint the teacher with important facts in regard to the character and home conditions of the pupils; it would give the physician important facts

in regard to earlier development and the morbidity history of the pupils; and after more biologic studies of the school beginner have been made, it would enable the physician and teacher to determine both the physiologic type and the learning type to which the individual child belongs. And, finally, it would change the attitude of the teacher toward the parents, in many cases giving them a wholesome respect for the expert character of the parents as regards their own children, and make it far easier for both parents and teachers to cooperate.

Another great problem is that of retardation. Among the causes of retardation recognized by Professor Strayer[11] are "illness extending over a long period, backwardness or mental deficiency, the lack of a school course adjusted to the needs of varying abilities." The difficulties mentioned by Dr. Strayer — illness, mental deficiency and ill adjusted school course — should be attacked at the outset in the light of a thorough study of the raw material when brought to the school. Again the money cost due to the repeaters has often been pointed out. The estimates of this have perhaps been exaggerated, but the cost in any case is enormous, and the waste of time and energy great. A large part of this could be saved by admission tests and by proper grading, and the saving of money would probably more than make up for the added expense of this examination.

One of the reasons for retardation is the fact that children enter school prematurely or in such imperfect physical or mental condition that they cannot do the work of the school. Failure occurs from the first, and the pupil handicapped both physically and mentally is turned back at the close of the year to repeat the same dreary routine. The place to begin the prevention of retardation is at the entrance of school life.

The next great educational problem concerns the elimination of pupils. Why do pupils drop out of school before their course is completed? It is usually because they do not succeed in school work, or because they are more interested in something else, or because the parents do not cooperate with the teacher in trying to keep them in the school. An admission examination of the thoroughgoing kind would not only prevent those who cannot succeed in school work from entering, and make better adjustment possible, thus averting many heartbreaking failures among the pupils, and much futile worry and effort among the teachers; but, as already suggested, if it were harder to enter school, parents would not esteem its privileges so lightly or be so ready to let their children leave it.

Again, take the group of problems included under the word efficiency. During the last few years this has become a word to conjure with. The term is more or less abhorent to the scientist, because, on the one hand, it often stands for a superficial view of the great problems of life and work; on the other, because many of the principles of this new science of business and industry were worked out twenty-five years ago by Mosso and others in the laboratory, and then ignored because business was ignorant of science. But the problems involved are of vital importance; and it is well that they have been put in the terms of the shop and the counting room and thus made to appeal to those who have a business apperception.

What, however, could be more inefficient than our present haphazard methods of beginning school work without determining whether or not pupils are fit for school occupations? Why should public money be spent in trying to teach those who can profit little by instruction or who are likely to be injured by it? The teachers are also handicapped by the presence of such children, and it largely thwarts the purpose of school education. From the point of view of common sense and efficiency, let alone hygiene, is there any good reason, any justification for admitting children to school work in the present haphazard fashion and in neglecting to give such an examination at the beginning of school life? Admission of the deficient should be postponed, or they should be placed in special classes.

Another great problem of the school is the problem of grading. It is obvious that if children were tested at the beginning of school life, if the different working types were distinguished, and if the feebleminded were excluded, it would be far easier later on to solve the problem of grading. Many of the difficulties of this problem would be removed by such an examination, and the right beginning would save a considerable number of repeaters in the early grades.

Most important of all, perhaps, is the problem of obtaining the right attitude between pupil and teacher. A thorough examination of the children at the outset would help much toward insuring this. The teacher would learn the handicaps of defective vision, defective teeth, chronic disease, unfavorable home conditions and the like. Such an examination would be of great advantage to teachers also in another way. The great mistake still found almost everywhere is that of giving attention to the subject to be taught rather than the child to be educated, the subject of culture rather than the object of culture. An examination of this sort would at the outset call the attention of the teachers to the needs of individual pupils, and the advantage to teachers might be as great perhaps as to parents.

Educators now are beginning to recognize that the knowledge acquired in the school amounts to relatively little, but that the habits formed and the attitudes toward life and society and work that are carried away from the school are of vital importance. A circular issued to the state inspectors of schools by the state superintendent in Wisconsin calls attention to this fact, and this is coming to be the keynote of the exhortations to teachers. If, then, this is the aim, what could be more important than to start school work aright and to have the right attitude toward the school developed at the outset in the minds of parents and teachers on the one hand, and the right attitude in the mind of the teacher toward the pupil on the other hand?

Such an examination will seem of course utopian; but practical school hygiene no longer fears this charge. The difficulties connected with such a plan are, of course, great. One objection which will be urged is the fact that so much time and expense would be required to make such examinations. Of course it is all a question of relative values; but if, as is probable, the whole scholastic career of the child is likely to be influenced by the way he begins school work, and if the attitude of parents and teachers is to be determined largely by such an examination, and if the school work for the early years at least will be made far more efficient by having it, and if, finally, the parents are likely to be educated by such an examination to better cooperation and greater interest in the school, how could the time be better spent? It would be an excellent thing in most cases if both parents were required

11. Strayer, G. D.: Retardation and Elemination of Pupils, Monroe's Cyclopedia of Education, New York, the Macmillan Company, 1913, 5, 169.

to give up half a day for such an examination, with provision, of course, that in case of special need one parent might be excused. Nothing, probably, would do so much to make the parents interested in the work of the school, to make them prize its opportunities, to make them cooperate with the teachers and to make them give more intelligent attention to the physical welfare and health conditions of their own children.

It frequently becomes necessary on account of the ignorance and poverty in many homes for the school to assume functions which do not belong to it. It may well be maintained, for example, that it is not the function of the school to bathe children or to clean their teeth; but it often becomes necessary for the school to assume such duties. In all such cases, however, the principle should be for the school to assume them in such a way that it will not be permanently necessary. The parents should be so educated that after a time they will assume the functions which really belong to the home; and in any case the training should be such that when the pupils who are in the schools today become the parents of the next generation they will be competent and willing to perform the duties which really belong to the home. Education of the parents of today would be greatly furthered by their presence in this admission examination.

Again, it would tend to give teachers the right attitude toward the home and toward children. Teachers should always recognize the authority, the responsibility and the general expert character of the parents in the education of their own children. The numerous exceptions to this can be treated all the better by one who recognizes this general truth. On the whole, perhaps we may say that parents are not much more inefficient than we teachers, and certainly we can learn from a child's parents in regard to the best method for his education.

Again, such a plan not only is likely to make the work of the teacher easier, but also to make it far easier for the medical inspector to do his work without interference from the parents and to make the school nurse a welcome visitor in the homes. Such a plan with a suitable system of medical inspection and with school nurses would also make it far easier to control contagious diseases. The interest of general hygiene as well as of school hygiene would be greatly furthered. The medical inspector in turn will lose nothing by recognizing the general expert character of parents in regard to their own children.

Many things of vital importance in connection with the development of children are likely to be known only by the parents, and would be gladly contributed by them in such an examination. For example, children who are born prematurely are apt to have a precocious development, as might be supposed. The premature stimulation from the external world hastens the medulation of the nerves, and I understand that observation shows that in later years such children are more liable to certain disorders and are less able to do the work of the school. Such a fact is of vital significance for adapting the work of the school to the individual, and parents alone are able to give this information.

The work of medical inspection cannot be carried out satisfactorily without the intelligent cooperation of parents. The difficulties found by the inspectors in performing their duties in health inspection illustrate this concretely. Dr. Arnold[13] of Boston has reported cases in the early years of medical inspection in that city, among them the following:

> Four children were sent home with suspicious-looking throats. With each child was sent a note stating that there had been some cases of diphtheria in the schoolroom, that the child had a sore throat which probably was diphtheria, and that the school inspector advised calling the family physician. The doctor was not called in a single case. The mother of one of the children brought him back herself in the afternoon, and was abusive to the teacher for sending him home. I turned up just in season to get my share. I was informed that I did not know what I was talking about; that his nausea and vomiting and constitutional symptoms two days before were due to indiscretion in eating; that his sore throat was "simply tonsillitis," to which he was subject, and that the patches in the throat were of no importance. The other children might have diphtheria, but her boy didn't "because he wasn't sick enough." She refused to let me take a culture, and was informed that the boy would not be admitted to the school until a negative culture had been obtained by myself, or, if she preferred, by her family physician. She did not go to the family physician until after a week had elapsed, when a culture proved negative. I feel reasonably sure, however, that an earlier culture would have been positive.
>
> The three other children returned next morning. Two brought verbal messages that they were well enough to come to school. The third brought a note from his father, saying that it was absurd to say his boy had diphtheria. Cultures were taken from all three throats, and all proved positive. The mother of one of these was not convinced even then. She called another doctor to prove that the school doctor was wrong, and discharged him when he obtained a positive culture, and she was only partially persuaded there was no trick in it when a third doctor also found a positive reply to his culture.

A HEALTH YEAR FOR BEGINNERS

Health inspection comprises two things: first, limited medical inspection for detecting and controlling contagious diseases, and second, physical and mental examinations to determine the stage of a pupil's development, physical defects, noncontagious diseases and the like. There is a growing consensus of opinion that while the former may be placed under the control of the board of health, the latter should be under the control of the educational authorities, or at least conducted with their full cooperation. In any case there should be concentration of authority and responsibility in the hands of competent experts, and adequate records should be kept.

The latter form of health inspection should be made much more thoroughgoing than is now customary. The results of recent investigations in child hygiene indicate that the aim and character of elementary education should be revolutionized and the emphasis placed especially on health, normal development, spontaneous motor activities, plays, voice drill and the like; that if the work of the school is to be done successfully in later years special care should be taken at this period to put the child's physical organism in the best condition possible for healthful development. This is the time to care for the development of the vital organs of the body, to protect the sense organs, and to develop habits of healthful activity in the widest sense.

If the hygienist could have his way, the first year of school life, or perhaps the first two years, would be a *Vorschule*, in which the teachers would be physicians

13. Arnold, H. D.: Some Results of the Medical Inspection of Schools in Boston, Report of the Commissioner of Education, Washington, 1897-1898, p. 1494.

and hygienists; and the aim for this year would be to determine the child's stage of development, his physical resources, his physical defects, etc., and as far as possible to remedy these defects and to foster normal development by ample opportunity for play and other forms of spontaneous motor activity.

Note what happens at that great epoch in life when a child enters school. The freedom of the home and of the street must be given up for the restraint of the schoolroom. Customary stimuli are replaced by new ones. Customary reactions must be inhibited and new forms of response acquired. In general, an attempt is made to develop the power of inhibition and of voluntary attention. As a result, the first year is liable to be a trying one. In Germany this has been indicated by several studies. The need of a special examination at school entrance and of special hygienic care during the first year of school life in that country has been strongly emphasized by the results of several investigations which show the work of the first school year correlated with a decrease in the rate of growth and an increase in the amount of disease. Dr. Schmidt-Monnard,[14] for example, as a result of investigations carried on for years in Halle, found that with the beginning of school life there was a decrease in the rate of physical growth. According to his studies carried out on the same children the yearly increase in weight for those who had not yet entered school was, for the years 6 to 7, 2.2 kg. for boys, and 1.9 kg. for the girls. The rate of increase in height was 7.4 cm. for the boys, and 5.4 cm. for the girls. On the other hand, in the case of children of the same age who had already entered school, the yearly increase in weight for the year 6 to 7 was for the boys only 1.5 kg., and for the girls 0.6 kg.; the increase in height for the boys was 4.2 cm., and for the girls, 4.5 cm. Thus the increase both in height and weight was less in the case of both boys and girls who were in the school than in the case of the boys and girls of the same age who were not in school.

Hertel, in Copenhagen, where the children entered school at the age of 7, found a considerable increase in the morbidity of the children in the seventh year of life, that is, in the period after school entrance, and a decidedly marked minimum of disease in the sixth to the seventh year, that is, the year before school entrance. In Halle, on the other hand, where the children entered school a year earlier, this year, 6 to 7, was the time of an increase of the morbidity.

Dr. Quirsfeld[15] also studied the effect of the first school year on 1,014 schoolchildren. According to him, the average increase in growth in the first school year was 2.5 cm., and in each succeeding school year 5 cm. The average increase in weight in the first school year was only from 0.5 to 1 kg., in the second school year from 1 to 2 kg. He found also in the course of the first school year a decrease in weight in cases of 15.87 per cent. of the boys and 24.84 per cent. of the girls; and a standstill in weight in the case of 29.73 per cent. of the boys and 44 per cent. of the girls; he found also in the course of the first school year a decrease in muscular development in the case of 29.59 per cent. of the boys and 49.05 per cent. in the case of the girls.

As Dr. Quirsfeld remarks, it is difficult to give the cause of this; whether the seventh year of life is the period of weakest physical development it is difficult to say. As a control it would be necessary to have a sufficiently large number of children of the same age, who during the seventh year of life were out of school, living a free life as heretofore. Injurious influences, mental overstrain, fatigue, insufficient sleep — in modern schools and with modern methods of instruction — can hardly, except in individual cases, be alleged as possible causes for arrest in physical development. The causes may be exclusively individual constitution and changed conditions of life.

Until we have such a preparatory year devoted to health and development, the problem of what should be done with those children who would be excluded from school by such an entrance examination is an important one. In Bonn and other cities in Germany where an entrance examination of more or less thoroughness is made, the children excluded because of lack of physical development are usually placed in a kindergarten. Such a plan modified to suit local conditions, especially if the kindergarten has largely outdoor occupations, seems an excellent one.

14. Schmidt-Monnard, in Selter, H.: Handbuch der Schulhygiene, Dresden, Steinkopff, 1914, p. 362.
15. Quirsfeld, in Selter, H.: Handbuch der Schulhygiene, Dresden, Steinkopff, 1914, p. 363.

SUMMARY

The reasons for a thoroughgoing health examination like that described above are obvious. Such an examination is desirable:

1. To prevent those children who are in ill health or not sufficiently developed physically and mentally from entering.

2. To provide the necessary physical data to enable teachers so to order the school work that it will not result in injury to health or a check to development, as often happens in the first year of school life.

3. That proper grading and adaptation of school occupations to individual capacity may begin at the outset of school life.

4. To give school physicians the data necessary for safeguarding the health of children against contagious diseases and the like.

5. To give teachers proper knowledge of the new pupils and the right attitude toward them.

6. That children may begin right and be saved from unnecessary failure and retardation or elimination in later grades.

7. To educate parents and foster a right attitude toward the school.

8. To save the money of tax payers, now largely wasted, and so badly needed to provide for absolutely essential hygienic conditions.

Children who should be excluded from the school are:

1. Those who have any infectious disease.

2. Children who have rickets, or the after-effects of rickets to the extent that they are in poor physical condition and liable to develop neuroses or some other defect from the influence of school work.

3. All children who have tuberculosis, unless there are outdoor schools in which they can be placed.

4. Children who are in a serious condition of anemia, unless again there are outdoor schools in which they can be placed.

5. Those who have any chronic disease which is liable to be aggravated by school attendance or would interfere with school work.

6. Those who are in a retarded stage of physiologic development or mental development, where this would be improved probably by keeping them out of school,

and where injury would be done by admission to school, or where it would interfere with school work.

7. Those who have serious sense defects.

8. Those who have any neuroses or the like which would be psychically contagious, epilepsy, chorea, stuttering and the like.

9. Children who have not been vaccinated.

The importance of this entrance examination can hardly be exaggerated; and here is an opportunity where women's clubs, parent-teachers associations, and similar organizations may use their efforts to good effect, to bring about as soon as possible a public sentiment which will not only permit, but also demand, a thoroughgoing examination of this kind.

In order to make the results satisfactory, however, the examination should be thoroughgoing, plenty of time should be taken for it, and both parents and teachers should be present.

The practical man will say that a plan of this kind is admirable, but at present it is quite out of the question because it would never be possible to get parents to attend such examination, and give the necessary cooperation. Of course it might not be possible in all places, but it would be possible in certain communities at least to approximate a plan of this kind; and this is the ideal toward which health inspection should work.

Our present haphazard method of taking in the sick and the well, the developed and the undeveloped, the normal and the feebleminded, the defective and the sound, and of teaching them together at the outset is wasteful and absurd. A grading with the knowledge that we now have would help to a great degree.

The movement for health inspection should be ardently advanced. A health examination at school entrance is the next important step. With the present dissatisfaction with the schools on the one hand, and the great interest in methods of efficiency on the other, the time is favorable for such an improvement. This would ultimately require some new legislation and some readjustment of school plans, but it would be merely carrying farther what is already done in some schools. If the plan were given a fair trial in some one city or state, I am confident that the advantages would be so great that soon the movement would spread.

Thus it is obvious that such a thoroughgoing examination of the physical and mental condition of the children would help in many ways. It would help greatly in the diagnosis of doubtful cases. It would save the expense of a large number of repeaters. It would lighten the burdens of the teachers. It would develop right attitudes in parents, and in many cases save the anguish of discovering later that children are feebleminded or defective. It would be only reasonable justice to the children themselves. It would in some cases save those who are candidates for mental disorder. In a word, such an examination would be distinctly important for mental as well as somatic hygiene.

The Cure for Alcoholism.—The education of public opinion and private habits is at present the only reasonable and promising measure at the service of the public health officer and the private practitioner in the effort to have the general use of alcoholic beverages—and the largest single cause of poverty and sickness—abandoned. Other habits, also, as to housing, eating, personal cleanliness, recreation, etc., are certain to be modified by education, and in no other way.—Haven Emerson, M.D., "Preparedness for Health."

THE CLARIFICATION OF MILK

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Among the important developments which have taken place in recent years in the market milk industry has been the introduction of the milk clarifier. An interesting phase of the subject is the attitude of public health authorities toward the process.

It is well known to every one who is at all acquainted with milk production that under ordinary conditions more or less dirt of an insoluble nature is introduced into the milk. The grosser particles are removed on the farm by strainers of cloth and wire. So long as milk was dispensed from the can and placed in the vessels provided by the housewife, the small amount of sediment which might be deposited was not noticed, since, as a rule, the milk was placed in opaque vessels. With the advent of the milk bottle, amounts of sediment which previously passed unnoticed became evident, and the dealer was forced to demand of the farmer greater care in the production of the milk, and likewise was forced to improve his own processes of straining the milk. The statement has been made that the Babcock method of determining the content of milk in butter fat has done more to make dairymen honest than the ten commandments. It would seem that the use of the glass milk bottle would have had a great effect in inducing cleanliness on the farm if methods had not been found for removing all materials which would settle in the milk. The cream separators were widely used for this purpose. The violent agitation to which the milk was exposed and the removal of the skim milk and cream from the machine through separate outlets made it difficult to get a product which would cream as rapidly and completely in the bottle as the untreated milk. The consumer judges the richness of the milk by the depth of the cream layer, and hence any process which tends to diminish this layer does not receive the full approval of the dealer, no matter what its other advantages may be.

The introduction of the clarifier, a machine in which the cream is not separated from the skim milk and yet in which sufficient centrifugal force is applied to the milk to remove any materials which would settle through force of gravity, caused clarification to be looked on with much greater favor by the milk dealers, since the milk creams in the bottles as well after treatment as before. The clarified milk does not show any sediment, and the consumer can draw no conclusions concerning the conditions under which the milk has been produced, so far as the introduction of dirt is concerned. In other words, insoluble dirt which has been introduced into milk can be removed. The milk can be improved in appearance and thus made more appetizing.

During the last few months some interesting articles have appeared. Dr. J. Arthur McClintock,[1] bacteriologist, published the results of his investigations made in several cities, including Chicago, St. Louis, Cincinnati, Omaha, and Lincoln, Neb. He says:

> It is generally acknowledged that there is no absolutely normal human being; neither is there any absolutely normal dairy cow. In the system of every animal the process of

1. McClintock, J. A.: Milk Trade Jour., August, 1916.

repair is constantly going on. In this process waste products are constantly thrown off. By waste products we mean disintegrated tissue cells; worn out leukocytes which have performed their mission and died; shreds of mucus from slightly catarrhal membranes, and the like. No strainer, however fine, will eliminate them; no process of heat will separate them from the milk. So a simple process of elimination was devised, which has, in these days of dairy *sanitation*, taken the name of clarification.

Clarification, then, is a process of *cleansing* milk of udder waste and other such materials by centrifugal force without affecting its butter fat or its other *normal* constituents.

It might well be asked, if there is no normal dairy cow, what basis we have for judging whether any cow is abnormal. It might again be asked, if tissue cells and leukocytes which have performed their mission are to be found in all milk, why they are not *normal* constituents of milk.

The doctor then presents data to show that with the Type A machine the reduction of bacteria as measured by plate counts ranged from 29.7 to 52.8 per cent., and with the Type B machine from 2.7 to 29.8 per cent. In two cases a decrease of 2.6 and 3.5 per cent., respectively, was noted.

In many cases *B. subtilis* was found in the untreated milk. In the tabular data referring to the untreated milk such cases were starred. No stars appear in the data referring to the treated milk. Apparently *B. subtilis* was not there found. A statement in the text tends toward the conclusion that the removal was not perfect, since one machine removed from 95 to 100 per cent. of *B. subtilis*, another from 30 to 31 per cent., and another 30 per cent. Then follows some new information:

> *Bacillus subtilis* is one of the most troublesome organisms with which we have to deal in the milk industry. . . . When present in milk in considerable quantities, it produces what is known as a peptogenic ferment. This ferment, with its by-products, alters the nutritive value of the milk through putrefactive changes, making it indigestible for the child who drinks it. The consequence is a starting of the condition known in household terms as "sour stomach."

Apparently some of the work was done in the laboratories of the Cincinnati Board of Health. It is stated that many cities are using it extensively; that in Cincinnati "Dr. Blume, the dairy commissioner, with his usual wonderful forethought, has enforced clarification absolutely." Dr. McClintock states that he has been told by officials in many cities that they felt the system filled a much needed place in dairy sanitation and would take the place of many of the defects which have existed in our present-day process of handling market milk.

An article by Hinkelmann[2] deals with some experiments with the De Laval clarifier. He found a reduction in the bacterial content of milk ranging from 56 to 98 per cent. Broth cultures of staphylococci, *Bacillus typhosus, Bacillus coli*, streptococci, and diphtheria bacilli showed reductions ranging from 53 to 98 per cent. He draws interesting conclusions from his data regarding the relative weight of different organisms. The streptococcus weighs 96, the pnemococcus 95, the diphtheria bacillus 90, the typhoid organism 64, and saprophytes 57. He says:

> Throughout the experiments I could not help but be convinced of the greater density of the pathogenic organisms. . . Since streptococci, pneumococci, staphylococci, diphtheria and typhoid bacilli constitute largely the group of offending organisms we have to deal with in milk and water, their relatively greater weight makes it very promising of an easy means of eliminating such numbers as contamination would be likely to show.

These are two articles written by apparently disinterested scientific men seeking the truth. Let us notice two articles written by disinterested scientific men connected with public laboratories. Bohlman,[3] the chief chemist of the Cincinnati Department of Health, reports on some trials with a clarifier. He found an increase of bacteria due to clarification, ranging from 9 to 60 per cent., on the average 27 per cent. He says:

> The residue in the clarifier consists very largely of substances normally present in milk. Clean fresh milk from healthy cattle will yield a deposit when passed through a clarifier. It is an exaggeration to consider the material deposited in the machine as consisting entirely of filth. Milk containing pathogenic organisms is practically no cleaner from the health standpoint after clarification than before. . . . We must not consider the clarifier as in any way a remedy for faulty conditions at the source of supply, nor as a substitute for pasteurization.

Hammer[4] made an extended study of clarification. In the case of milks containing less than 100,000 bacteria per cubic centimeter the average increase was 24 per cent. In no case was there an apparent decrease. With milks showing between 100,000 and 500,000 the average increase was 43 per cent. A decrease was noted in nine out of the twenty-seven samples examined. In the case of milk containing more than 500,000 per cubic centimeter, the average increase due to clarification was 29 per cent. In three cases out of fourteen a decrease was noted.

In general, the results of careful workers indicate that the bacterial content of milk is apparently increased by clarification. There is, of course, an actual decrease in case the contamination from the machine does not exceed the number of bacteria present in the slime removed by the process. The increase is an apparent one due to the breaking up of clumps of bacteria in the milk and therefore an increase in the number of colonies on the plate cultures. The important point is that the clarification process has no favorable effect on the keeping quality, and there is no reason to believe that such a proportion of harmful kinds of bacteria is removed that the healthfulness of the milk can be said to be improved.

The advertisements of the various machines contain statements based on the first two papers mentioned. One of the most interesting statements noted was that the process removes the disease-producing bacteria because their toxins make them heavy.

It is evident that the layman may be led by such statements to believe the process a valuable one from his point of view, but how health officials can be influenced by them is beyond one's imagination. I have been informed that the cities of St. Louis, Cincinnati, Gary, Ind., and Tulsa, Okla., have passed ordinances requiring clarification. I am proceeding on the supposition that such ordinances have been given the approval of the respective health departments. In other words, we have presented to us a picture of health officials requiring milk to be subjected to a process which in no way can be said to improve the milk. Frankly stated, it provides a way by which the

2. Hinkelmann, A. J.: Micro-Organic Weight, Ill. Med. Jour., March, 1916.

3. Bohlman: Am. Jour. Pub. Health, 1916, 6, 854.

4. Hammer: Research Bull. 28, Iowa State College of Agriculture.

dealer can handle dirty milk without the knowledge of his customers. The dirt is removed but not the bacteria, pathogenic and otherwise, which were introduced with the dirt. Milk dealers need no ordinances to encourage them to use clarifiers.

Such actions of health officials would not be worthy of notice did they not illustrate what is constantly going on in health legislation, namely, the passing of ordinances which have no relation to public health under the recommendation of the health officials. When the truth is discovered by the citizen, is he not inclined to regard all regulations as being of a similar nature, that is, something which places a burden, economic or otherwise, on him with no resulting benefit?

The introduction of pasteurization is opposed by health officials because it enables the dealer to handle a poorer grade of milk than he otherwise could. Although this is perfectly true, pasteurization gives to the consumer a product more safe and of better keeping quality than the raw product. The clarification of milk is objectionable from the standpoint of the consumer, and yet health officials are apparently being led to urge its adoption. One is inclined to ask "What next?"

THE OCULOCARDIAC REFLEX IN SYPHILIS OF THE CENTRAL NERVOUS SYSTEM

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In the normal individual, pressure on the eyeball causes a slowing of the pulse rate through vagus inhibition. This inhibitory influence is likewise shown through action on various sensory nerves or surfaces. Goltz,[1] in 1863, by his *Klopfversuch*, observed "standstill" of the heart following rapid light blows on the abdomen of a frog, which phenomenon was not observed when the vagi were cut. In man this is not infrequently seen in acute dyspepsia, peritonitis, a blow on the testes, etc. The afferent impulse in all these cases, carried to the central nervous system, causes a reflex activity of the inhibitory cells of the vagus. This cardiac inhibitory center may be considered as the bilateral group of cells in the medulla at the level of the nuclei of origin of the vagi, and when the "tonic" action constantly exerted through this center is increased, cardiac inhibition results. When the eyeball is pressed, the afferent impulse is carried through the ophthalmic branch of the fifth nerve to the gasserian ganglion and by way of the larger root to its nucleus of cells lying on a level with the middle of the superior peduncle of the cerebellum, just internal to the margin of the fourth ventricle and external to the nucleus of origin of the motor fibers of the same nerve. The impulse passing downward to the cells of origin of the vagi, situated in the lower part of the floor of the fourth ventricle, excites the inhibitory cells, causing a slowing of the heart rate. In this as in any other reflex, abolition or exaggeration is resultant on destruction or irritation of the reflex arc.

Ashner, who first considered the oculocardiac reflex, regarded an acceleration or retardation of ten beats or more a minute as abnormal. Loeper and Mougeot[2] noted the abolition of the oculocardiac reflex in tabes, and stated that this abolition occurred in general with a diminution in the sensibility of the trigeminal fibers, sometimes with vagus disorders and always with Argyll Robertson pupil. Lesieur, Vernet and Petzetakis,[3] from their observations, concluded that the reflex was sometimes abolished in tabes, even though the Argyll Robertson pupil was not present, in which case it might prove of early diagnostic value in determining the condition of the posterior root fibers of the pons, and consequently show the degree of ascending extension of the tabetic lesion. Guillain and Dubois[4] reported six cases of pseudobulbar palsy in which they found the oculocardiac reflex to be abolished in four cases and accelerated in two, from which they inferred that central lesions have an influence on the determination of this reflex. Loeper, Mougeot and Vahram[5] regarded the abolition of the oculocardiac reflex as an evidence of the affinity of syphilis for the central nervous system and as constituting one of the first evidences of disease of the central nervous system. Roubinovitch and Soudiere[6] stated that "in the dementia due to syphilis of the central nervous system,

1. Goltz: Virchows Arch. f. path. Anat., 1863.

2. Loeper and Mougeot: Bull. et mém. Soc. d. hôp. de Paris, December, 1913.
3. Lesieur, Vernet and Petzetakis: Soc. méd. d. hôp. de Lyon, March, 1914.
4. Guillain and Dubois: Bull. et mém. Soc. méd. d. hôp. de Paris, March, 1914.
5. Loeper, Mougeot and Vahram: Progrès méd., April, 1914.
6. Roubinovitch and Soudiere: Soc. de psychiat. de Paris, June, 1914.

AVERAGE RESULT OF A STUDY OF THIRTY-SEVEN CASES

Pupils*					Wassermann						
	R.	AN.	L.	AC.	C.R.	O.R.	Blood	Fluid	Noguchi	Cells	Lange's Test
Primary optic atrophy (paresis)	—	+	—	—	Yes	Absent	4	4	Positive	69	5555555000
Third nerve paralysis	—	+	—	+	Yes	Absent	4	4	Positive	31	5554411000
Sixth nerve paralysis	—	+	—	+	Yes	Absent	4	4	Positive	20	5555554100
Seventh nerve paralysis	+	—	+	+	Yes	Absent	Neg.	3	Positive	84	1555553000
Millard-Gubler syndrome (left hemianalgesia)	+	—	+	+	†Yes	Present	Neg.	3	Positive	84	1555553000
Pseudobulbar palsy	—	+	—	—	†No	Absent					
Tabes dorsalis	—	+	—	+	Yes	Absent	4	4	Positive	28	Not made
Paresis (demented)	—	+	—	+	Yes	Absent	2	..	Spinal puncture refused		
Paresis (grandiose)	—	+	—	+	Yes	Absent	4	4	Positive	117	5555555552
Paresis (maniacal)	—	+	—	+	Yes	Absent	2	4	Positive	38	5555555321
Paresis (paranoid)	+	+	—	+	Yes	Absent	4	4	Positive	85	5555555211
J. M. (vitiligo)	+	—	+	+	Yes	Absent	4	Neg.	Negative	6	5555543100
R. W. (vitiligo and transitory hemiplegia)	—	+	+	+	Yes	Absent	2	Neg.	Positive	4	0055554000
Paresis (combined sclerosis)	—	—	—	+	Yes	Absent	2	Neg.	Positive	5	0155543200
Dementia praecox (24 yrs. of age with syphilis)	+	+	+	+	.....	Absent	Neg.	4	Positive	22	5555543200
					Yes	Absent	4	Neg.	Negative	8	1455543100

* R., regularity of outline; An., anisocoria; L., reaction of pupil to light; Ac., reaction of pupil to accommodation; C.R., corneal reflex; O.R., oculocardiac reflex.
† L.R.

hereditary or acquired, abolition of the oculocardiac reflex occurs very frequently, and, therefore, in absence of other physical signs of the disease, ought to suggest the etiology of the condition," and concluded that the abolition of the oculocardiac reflex was indicative of an organic lesion of syphilitic disease (hereditary or acquired) of the central nervous system.

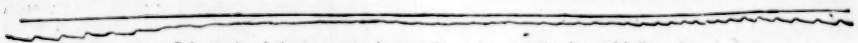
The accompanying table is an average result of a study of thirty-seven cases of syphilis of the central nervous system in which pulse tracings were made.

OBSERVATIONS

1. Abolition of the oculocardiac reflex is among the earliest signs of syphilitic disease of the central nervous system and one of easy diagnostic practicability to the general practitioner.

2. The oculocardiac reflex was abolished on the side exhibiting the hemianalgesia with preserved tactile sensation in the case presenting the Millard-Gubler syndrome.

3. In only one case of well marked tabes with cervical involvement in which pressure on the eyeball and testes was not painful was there evidence of diminished or disturbed superficial sensation other than in the case mentioned above.



Pulse tracing during paroxysm of spasmodic weeping, occurring in pseudobulbar palsy.

4. In 52 per cent. of the cases studied, the pulse rate ranged from 82 to 112, and the increased rate occurred chiefly among the well marked paretics.

5. In third nerve palsy, the ptosis can sometimes be overcome by the patient reinforcing the ptotic lid by forcibly holding the lids of the sound eye closed.

6. During the paroxysms of spasmodic weeping, occurring in pseudobulbar palsy, the radial pulse is practically imperceptible at the wrist, showing a reflex inhibition of the heart beat.

Central Indiana Hospital.

ACUTE APPENDICITIS

ANALYSIS OF EIGHT HUNDRED AND TWENTY-TWO CASES IN WHICH OPERATION WAS PERFORMED AT THE COOK COUNTY HOSPITAL

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From Nov. 11, 1912, to Feb. 22, 1916, 822 patients with acute appendicitis were operated on in the Cook County Hospital by the surgical staff of this institution. Of these, 766 recovered and fifty-eight died, a mortality of a trifle over 7 per cent. (7.05 +).

This corresponds almost exactly to that noted by Coffey,[1] who found a mortality of 7.4 per cent. in a series of 13,445 operations, collected from the various hospitals of this country.

Table 1, made from the notes recorded at the time of operation, will give an intelligent comprehension of the pathologic conditions encountered.

Of the fifty-eight cases terminating in death, seventeen showed a general peritonitis at the time of operation. These should be considered as cases of general peritonitis, as the complication (general peritonitis) is of far greater importance than the original condition. Deducting these from the fifty-eight cases which terminated fatally, we have a mortality of not quite 5 per cent. (4.98) for what might be called uncomplicated acute appendicitis. Unfortunately many of our patients come from an unintelligent clientele and are not brought to the hospital before the disease is far advanced, and the patient practically in a dying condition.

The importance of operating before this unfortunate complication has set in is so well recognized that it needs no comment and is emphasized by the analysis of Table 1.

Of the 445 patients operated on for simple acute appendicitis, five died, a mortality of a trifle over 1 per cent. Of the 266 patients operated on for acute appendicitis (suppurative, gangrenous, perforating) with abscess, six died, a mortality of 2.2 per cent.

Of the 127 patients having gangrenous appendicitis without abscess formation, seven died, a mortality of 5.5 per cent. From this it would seem probable that abscess formation should be considered as an indication of resistance on the part of the organism.

1. Coffey: New York Med. Jour., August, 1906.

TABLE 1.—PATHOLOGIC CONDITIONS*

Condition	Number
Acute appendicitis	445
Acute appendicitis with abscess	266
Gangrenous appendicitis	127
Acute appendicitis with diffuse or general peritonitis	26
Normal appendix	1
Total	865

* The discrepancy in the figures (865 and 822) is due to the fact that sometimes two conditions were encountered, as gangrenous appendix and abscess.

TABLE 2.—PATHOLOGIC CONDITIONS ENCOUNTERED IN THE FATAL CASES

Condition	Number
Acute appendicitis and general peritonitis	17
Acute appendicitis and abscess	21
Gangrenous appendicitis	7
Gangrenous appendicitis and abscess	6
Acute appendicitis	5
Gangrenous appendicitis with intestinal obstruction	1
Acute appendicitis and cholelithiasis	1

TABLE 3.—OPERATIONS PERFORMED IN THE EIGHT HUNDRED AND TWENTY-TWO CASES

Operation	Number	Per Cent.
Appendectomy	418	50.8
Appendectomy and drainage	313	38
Simple drainage (appendix not removed)	79	9.5
Operation not described	12	1

TABLE 4.—OPERATIONS PERFORMED IN THE FATAL CASES

Operation	Number
Appendectomy	7
Appendectomy and drainage	32
Simple drainage	15
Cholecystostomy, appendectomy and drainage	1
Operation not described	3

TABLE 5.—CAUSES OF DEATH AS NOTED IN THE FIFTY-EIGHT FATAL CASES

Cause	Number
General peritonitis	33
General peritonitis and fecal fistula	5
Fecal fistula and decubitus	1
Fecal fistula	1
Subphrenic and retro canal abscess	1
Paralytic ileus	1
Pulmonary embolism and peritonitis	1
Brain abscess	1
Bronchopneumonia	1
Pneumonia	1
Femoral thrombosis	1
Hemorrhage from abdominal wound	1
Cause of death not stated	10

CONCLUSIONS

While acute appendicitis is usually considered as characteristically a disease of young adult life, it is not infrequent in childhood. One hundred and fifty of our 822 cases occurred in children under 15 years of age. Of these children, 138 recovered and twelve died, a mortality of 8 per cent. Riedl[2] gives a mortality of 13 per cent. in a similar class of cases in which operation was performed at the Jena Clinic.

TABLE 6.—COMPLICATIONS WHICH DEVELOPED DURING THE CLINICAL COURSE OF THE EIGHT HUNDRED AND TWENTY-TWO CASES

Complications	Number
General peritonitis	44
Fecal fistula	18
Pregnancy [8 did not abort, 2 aborted]	10
Pneumonia	4
Bronchopneumonia	1
Obstruction to drainage making second operation necessary	3
Appendicitis in hernial sac	2
Bronchitis	1
Pus in hernial sac	1
Pulmonary embolism	1
Subphrenic abscess	1
Ischiorectal abscess	1
Decubitus	1
Brain abscess	1
Femoral thrombosis	1
Hemorrhage from wound	1
Delirium tremens	1

From the data given in the tables, certain conclusions may be drawn as follows:

1. General peritonitis is still the most frequent complication of acute appendicitis. In a small number of instances a critical study of the clinical history reveals that this complication seems to have been dependent on too early removal of the drain in abscess cases. Drainage tubes, gauze, etc., should be removed gradually to avoid inclusions and subsequent spread of infection.

2. Early operation means a low mortality.

3. Abscess formation may be considered as evidence of resisting power on the part of the organism (2.2 per cent. mortality in abscess cases against 5.5 per cent. in gangrenous appendix cases without abscess formation).

4. Fecal fistula, while comparatively frequent and annoying, has little importance in increasing mortality.

5. Abortion is not greatly to be feared if appendicitis occurs during pregnancy. While we had only comparatively few of these cases, it is interesting that in the ten cases there were only two abortions.

910 Dakin Street.

2. Riedl: München. med. Wchnschr., Nov. 26, 1907.

Credulous Man.—"Credulity is a monarch upon whose kingdom the sun never sets. The cradle and the grave are its frontiers, the entire human race its subjects."

EXTREME PROLONGATION OF CONDUCTION TIME IN THE BUNDLE OF HIS

AN EXAMPLE RESULTING FROM DIGITALIS THERAPY *

LEWELLYS F. BARKER, M.D.
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AND
E. W. BRIDGMAN, M.D.
Instructor in Medicine, Johns Hopkins University, Medical Department
BALTIMORE

History.—A. A., white man, aged 60, married, farmer, was admitted to the private ward of the Johns Hopkins Hospital, Nov. 30, 1915, complaining of "heart trouble," having been referred by his family physician, Dr. Ira J. McCurdy of Frederick, Md., for diagnostic study.

The family history is unimportant. The patient married twenty-seven years ago, and his wife has had good health, though she has never been pregnant. There is no history of syphilis.

Except for measles, mumps and pertussis as a child, the patient gave no history of infections. For many years, he suffered, at times, from dyspnea that he attributed to the "hay-fever," to which he is subject. He stated that for nine years he had had what he considered to be "heart trouble," characterized by shortness of breath accompanying paroxysms of pain over the heart and extending into the left arm and neck. The patient said that with these attacks his "pulse had dropped beats," and, that following them, a soreness persisted over the heart. He had noticed that these attacks were brought on by exertion or by mental excitement. They could be avoided by rest and by the use of nitroglycerin. Subjectively, the attacks were characterized by a sense of impending dissolution.

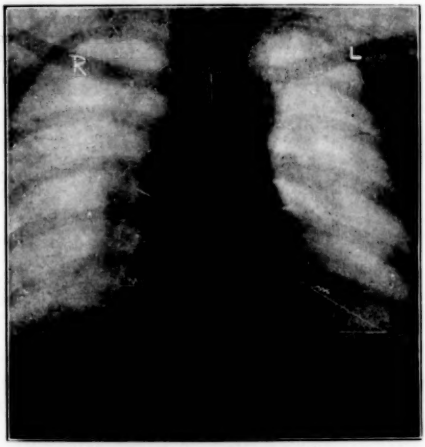


Fig. 1.—Teleroentgenogram of the heart: slight increase in cardiac volume.

The patient's habits have been good. He has always been a hard worker and he has had considerable business worry. In the year preceding admission, he had lost 30 pounds in weight.

The present illness, according to the patient, had been of about one year's duration, having followed and having been accentuated by unusual business cares; these cares, he asserted, had increased the frequency and severity of his "attacks." A month before admission, and again three weeks later, he had suffered from an unusually severe attack of cardiac pain precipitated by physical exertion. Both of these attacks had necessitated rest in bed for a week, during which time the pain continued irregularly to be present.

Physical Examination.—The patient was a rather large, well developed man. There was slight cyanosis, and slight signs of hyperthyroidism were made out. The pupils were active, and there was an arcus senilis in each eye. The ophthalmoscopic examination revealed nothing of importance. Carious teeth were discovered with marked pyorrhea alveolaris and evidences of considerable dental repair. There was no glandular enlargement.

* From the Medical Clinic of the Johns Hopkins Hospital.

The thorax was symmetrical and showed a slight tendency to funnel chest, with a wide costal angle. The examination of the lungs revealed nothing abnormal.

The pulse rate was 88; the pulse, on palpation, was regular in force and in rhythm. The radial walls were just palpable. Systolic and diastolic blood pressures were 160 and 80 mm. of mercury, respectively. There was a well marked venous pulsation in the neck, apparently of normal type. The apex beat was in the fifth interspace 12 cm. from the median line, and it was medial from the midclavicular line. The deep cardiac dulness extended 4 cm. to the right, and 14 cm. to the left of the median line; retromanubrial dulness, measuring 9 cm. across, was made out in the first interspace. There was a blowing holosystolic murmur at the apex, poorly transmitted toward the axilla. No accentuation of the sounds at the base was noted. During the examination there was an occasional irregularity suggestive of a ventricular extrasystole.

The liver dulness extended one finger's breadth below the costal margin.

The examination of the urine revealed nothing abnormal. The Wassermann test was negative. The blood count was normal. The temperature was not elevated.

A teleroentgenogram of the heart (Fig. 1) taken at a distance of 178 cm. revealed a longitudinal diameter of 18 cm., the transverse diameter measuring 12 cm. The right cardiac border was 5.7 cm., the left 11 cm., from the midline. In other words, the heart was only moderately enlarged.

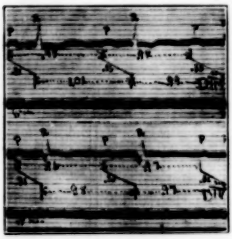


Fig. 3.—Electrocardiogram, D ii and D iii: Tracing taken the day of admission immediately after D i. A fairly constant cardiac activity is ascertained from the measurements recorded.

Roentgenograms of the teeth disclosed periapical absorption areas and evidences of focal infection under the bridge work; treatment was at once instituted and these sources of toxemia eradicated.

The studies made in the heart station of the hospital were of considerable interest. Numerous tracings, both electrocardiographic and polygraphic, were taken during the patient's stay in the hospital. On the day after admission, as the patient had been taking a good deal of digitalis, a series of electrocardiograms was taken. The tracing made with the first derivation appears in Figure 2, and merits close attention. The forms of the atrial and ventricular complexes are constant in type, that is, there are no signs of an ectopic origin for any of the excitation waves, and, a point of importance, all of the ventricular excitation waves are supraventricular in origin. It is to be noted that the waves occur at regular intervals, save that there is a slight sinus arrhythmia; these atrial waves are from 0.92 second to 1.09 seconds apart, and no demonstrable relation exists between the longer periods and either the ventricular rate or the conduction time. The *P-R* interval is exceedingly variable (from 0.23 second to 1.03 seconds, or, indeed, to infinity, for an occasional atrial wave is without effect on the ventricle). It is noteworthy that there is a progressive increase in the *P-R* periods to this infinitely long conduction time. Thus, the first four *P-R* periods in Figure 2 are, in sequence, 0.29, 0.37, 0.43 and 1.03 seconds, and

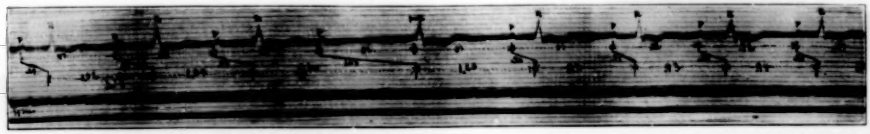


Fig. 2.—Electrocardiogram, D i: This tracing, taken the day of admission, shows variable conduction periods ranging from 0.23 second to time intervals are indicated on the tracing.

the next *P* wave is not followed by a ventricular complex at all. After the long rest thus afforded the His bundle, the conduction time becomes relatively rapid, for the next four ventricular complexes occur from 0.23 to 0.26 second after their controlling atrial excitations; and then, again, a slowing of conduction appears for three cycles (0.28, 0.36 and 0.90 second, respectively), and the next atrial wave is not conducted to the ventricle.

This form of prolongation of conduction time is that which we now know to occur as a result of digitalis therapy when the His bundle is diseased. It should always be borne in mind when administering digitalis or strophanthus; and when signs of it appear, further usage of the drug should be stopped, for if continued a complete heart block may supervene, the transition period to which is associated with well known dangers. The interventriculosystolic periods vary according to the interatriosystolic intervals and the conduction-time — from 0.93 second to 1.56 seconds; there was thus a marked bradycardia.

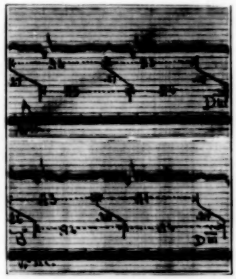
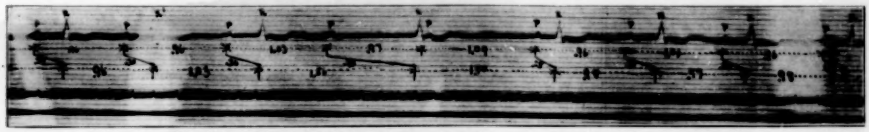



Fig. 4.—Electrocardiogram, D iii, after exercising a moderate degree in *A*, and to a violent degree in *B*: These tracings were taken immediately after the preceding ones, and show a regular cardiac activity with a marked decrease in the conduction period in spite of a more rapid rate, thereby exemplifying the heart's protective mechanism.

Immediately after the tracings were made with the first derivation, the adjustments were made to permit of the recording of tracings made with the second, and then with the third lead. These tracings, of which samples are shown in Figure 3, are quite constant as regards atrial and ventricular rates and also as regards the conduction periods, which, although prolonged, range in length only from 0.30 to 0.33 second. With a view to testing a possible relationship between periods of prolonged conduction and exercise, a tracing by the third derivation was repeated immediately after moderate, and again after strong, exertion. The result, as might have been expected, was to increase the atrial and the ventricular rates; interestingly enough, the *P-R* intervals were shortened from an average of 0.31 to one of 0.25 second. In spite of the use of such measures as

rapid breathing, deep pressure on the vagus, and mild exercise, it proved impossible to reproduce the excessive *P-R* intervals.

The following day a series of simultaneous tracings was taken. The apex cardiogram, the phlebogram and the electrocardiogram (in short sections) are shown in Figure 5. The *P-R* interval measures 0.18 second.



1.03 seconds. The atrial rate is fairly regular at 65 per minute; the ventricular rate is not so constant, but averages 50 per minute. The

whereas the *a-c* time on the venous tracing is 0.22 second. The actual period of ventricular systole, as shown on the apex tracing (measured from the onset of ventricular rise to the shoulder), was within normal limits — about 0.32 second. The next day some electrophonograms were recorded; a section of a tracing is shown in Figure 6. The venous tracing, which appears in the same figure, shows an *a-c* time of 0.23 second. On the phonogram, second sounds were picked out as having sharp onsets, and from their beginnings the first sounds were ascertained by measuring back 0.32 second, which had been found to be the period of ventricular systole. It is interesting to note that 0.12 second before the onset of the first sound, a well marked presystolic vibration appears, which corresponds in time to the presystolic gallop that had occasionally been noted on auscultation. This interval between the presystolic and the first ventricular sound is definitely longer than the normal where the time interval is about 0.07 second. This tends to confirm the theory that the presystolic sound is the result of atrial activity.

During the patient's stay in the hospital numerous tracings were taken, of all of which that shown in Figure 7, taken December 16, the day of discharge, is typical. Single left ventricular extrasystoles appeared occasionally, but the conduction times are just above the upper limits of normal, ranging from 0.18 to 0.22 second.

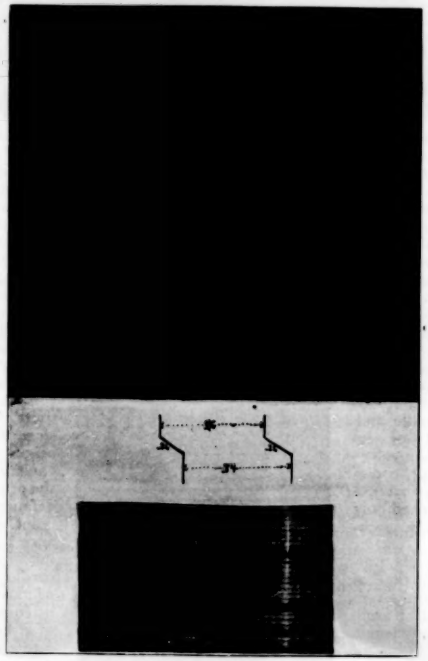


Fig. 5.—Apex, venous and electrocardiographic tracings taken two days after admission, showing slight increase in conduction time.

A diagnosis was made of *oral sepsis, arteriosclerosis, angina pectoris, partial heart block*, and a *slight grade of myocardial insufficiency*. As a result of the study, appropriate treatment was instituted. This was directed toward the prevention of further advancement of the arteriosclerosis by personal hygiene and by removing focal areas of infection. The patient was kept at rest in bed, and was given a light diet. Thrice weekly, he received general massage. All digitalis therapy was discontinued and his family physician was given a report of the findings showing the personal idiosyncrasy to digitalis dependent on the injury to the bundle of His.

After a stay of three weeks in the hospital the patient, much improved, was discharged.

Exclusive of its more theoretical interest in relation to cardiac physiology, this case is worthy of the attention of physicians for two reasons: In the first place it exemplifies, rather strikingly, one of the contraindications for the use of digitalis in the treatment of heart disease, and secondly, the accompanying tracings show an extreme prolongation of atrioventricular conduction time — a greater prolongation than in any instance hitherto recorded.

It has for some time been known that digitalis has the property of prolonging the conduction time of the His bundle, "provided the bundle is diseased." Especially is this true in cases in which, before therapy, there has already been some increase in the conduction time. As the dangers of the transition between partial and complete heart block (sudden syncope; ventricular standstill) have become recognized as very real, the risks of digitalis therapy in unselected cardiac cases have come to be understood. Fortunately, the vast majority of patients who are treated with digitalis show no untoward effects, possibly because of the fact that the His bundle is only comparatively rarely functionally impaired. There is, however, one group of patients in whom real

harm may result from the use of digitalis. This group comprises persons who suffer from coronary sclerosis of either a moderate or a considerable degree. As a rule, these patients exhibit also a generalized arteriosclerosis, which, in turn, may be characterized by the

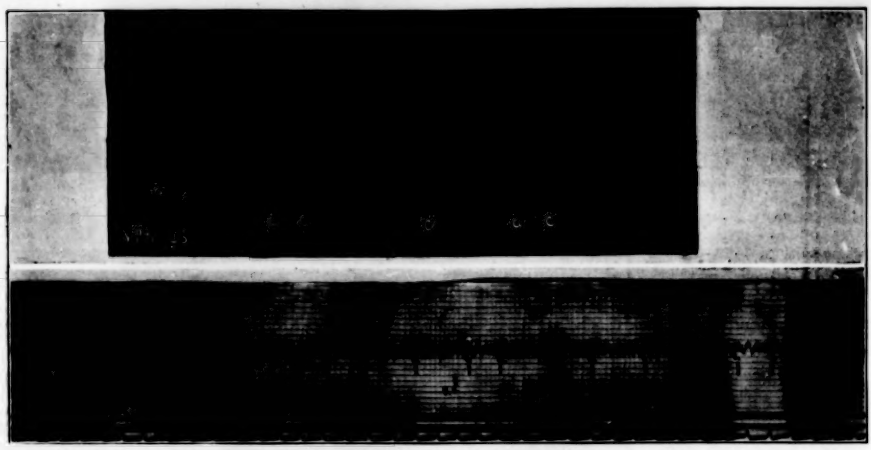


Fig. 6.—Venous and electrophonographic tracings: The time interval between the presystolic and first ventricular sounds is 0.12 second.

signs of a primary contraction of the kidneys, by a slight grade of myocardial insufficiency, by cerebral arteriosclerosis or by peripheral vasomotor crises. In such people indiscriminate digitalis therapy may be truly a menace, and digitalis therapy, if employed, should be controlled by tracings — either polygraphic or, preferably, electrocardiographic.

The blood supply of the His bundle is from an end-artery. Many different etiologic factors may lead to impairment of this vascular supply. The consequent deficient nutrition of the area supplied by the end-artery leads to fibrosis of the bundle and accompanying impairment of its function. The degree of involvement of the bundle cannot be discovered by the usual physical examination; it can be determined only by instrumental study of the circulatory function.

What the greatest possible prolongation of the conduction time of the atrial excitation wave to the ventricle may be is problematic; probably, the period may be of any length from the normal time up to one of infinite duration (with no resulting ventricular beat). Very few cases have been reported in which the conduction time, measured as the *a-c* time of the venous tracing, or as the *P-R* time of the electrocardiogram, has been more than 0.6 second. And, of course, in the *a-c* measurements one must take into consideration the presphygmic period, which, although variable, is generally between 0.05 and 0.08 second. Most of the reported cases of prolonged conduction time have been illustrated by polygrams and have not clearly excluded the possibility of impulses arising in the nodal region and causing coincidence of the *a* and *c* waves with the result that the *v* wave may have been regarded as the *a* wave of the succeeding cycle. Again, as in Gibson and Ritchie's case, one may doubt whether the waves have been correctly interpreted, when, for example, the first constantly recurring wave of the double group associated with atrial activity is attributed to a sinus origin, and the second wave is regarded as the true atrial wave. Furthermore, it is always difficult, in polygrams, to be sure of the exact character of the ventricular responses. In other words, it is distinctly advantageous, for the correct interpretation of cardiac activity, to have an electrocardiogram, since through it the supraventricular origin (if it exist) of the ventricular excitation wave can be confirmed, the origin of the atrial impulse can be definitely established to be in a fixed point, and the need for making allowance for a presphygmic period does not exist. But even in electrocardiograms there is a certain danger of mistake, owing to the possibility of coincidence of *P* and *R* waves and of *P* and *T* waves in cases of tachycardia. Much more free from possible error are cases that include simultaneous polygraphic and electrocardiographic tracings; the advantages of both the mechanical and electrical methods of study are thus obtained, and the coincidence of the *P* and *R* waves, and of the *a* and *c* waves at the same period in the same person are manifestly impossible, since *P-R* and *a-c* times are never equal in the same cardiac cycle.

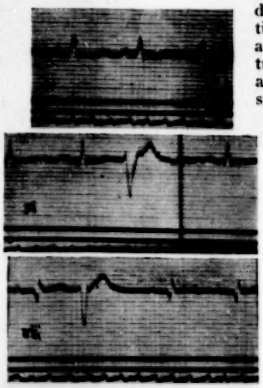


Fig. 7.—Electrocardiogram taken the day of discharge, showing occasional left ventricular extrasystoles. *P-R* time equals 0.22 second.

In a recent article, Prof. William S. Thayer[1] has reported an instructive case of prolonged conduction time that was studied with the aid of both electrocardiograph and the polygraph. The *P-R* interval occupied in one period the unusual time of 0.88 second, and the *a-c* time in one cardiac cycle was no less than 0.97 second. Other cases of remarkable prolongation of conduction time have been reported, notably one by Griffith and Cole, and one by Thayer and Peabody; in both instances *a-c* intervals up to 0.6 second in length were encountered. But nowhere in the bibliography have we found such a lengthening of the atrioventricular conduction time as was discovered in the patient whose history we have recorded.

A SKIN REACTION TO QUININ*

FRED BOERNER, JR., V.M.D.
PHILADELPHIA

Idiosyncrasies of certain persons to such drugs as quinin, strychnin, iodoform and atropin are not at all uncommon, and many cases have been reported in which serious symptoms have resulted from the use of these drugs by such persons.

For a number of years I have been known to be hypersensitive to quinin. The first indication of this sensitiveness was observed after I had taken the drug for an attack of grip, the effects being manifested by a body rash and intense itching of the skin. Several times since, it has been taken in relatively small doses and has invariably caused a reddening of the skin and severe itching.

In some of the noninfectious diseases due to anaphylaxis, skin reactions have been found of practical value, and as idiosyncrasies to drugs are believed to be due to this phenomenon, it was considered of interest to try a skin reaction for sensitiveness to quinin. The method of conducting this test was similar to the cutaneous tuberculin test (von Pirquet), with quinin sulphate as an antigen.

Skin reaction in author fifteen minutes after the application of powdered quinin sulphate in the upper abrasion; the lower abrasion is the control.

The forearm was cleansed with alcohol and dried. Two abrasions were made with a needle, about 3 inches apart. The scarifications were just deep enough to remove the superficial layers of the skin. To one of these abrasions powdered quinin sulphate was applied. The other was left untouched to show the amount of irritation produced by traumatism.

In about five minutes the abrasion to which the quinin was applied began to itch slightly. This was followed by a slight edema along both sides of the pin mark which in ten minutes became very pronounced. At the end of fifteen minutes the reaction was at its height, and at this time was surrounded by a zone of erythema presenting a mottled appearance and extending over an area about 1 inch in diameter.

The next step was to determine whether or not this reaction was due to the irritant action of the drug on the skin, or if it could be produced only in persons susceptible to the drug. The test was applied to six persons who have repeatedly taken quinin without suffering any inconvenience. Two of these were able to take over 6 grains, and the others at least 1 grain doses. In not a single instance was there the slightest degree of reaction, there being no perceptible difference between the abrasion to which quinin had been added and the control scratch on which the drug had been omitted. The results of these tests pointed decisively toward the specificity of the reaction. A number of these tests were seen and verified by Dr. John A. Kolmer of the McManes Laboratory of Pathology of the Medical School of the University of Pennsylvania.

One of my colleagues, Dr. H. C. Campbell, on learning the results of these tests, informed me that he also was unable to take this drug without the appearance of a rash and intense itching of the skin. This statement indicated a hypersensitiveness, and accordingly the skin test was applied. In this case a positive reaction was obtained which was an exact duplication of the reaction obtained in my case, beginning with a slight itching followed by edema and erythema which reached its maximum in about fifteen minutes.

From these results it was obvious that the skin reaction obtained with quinin was of a specific nature, as positive reactions were obtained in both cases in which susceptibility to the drug existed, and entirely negative results in persons who were not sensitive.

It was thought of interest to determine the amount of quinin necessary to produce a reaction, and quinin bisulphate in normal salt solution was employed in dilutions of 1:10, 1:100, 1:200, 1:500 and 1:1,000. Six abrasions were made on the chest, about 1 inch apart, and to these the various dilutions were applied, one abrasion being left as a control. The best reaction was obtained with the dilution of 1:10, it being even more pronounced than those obtained with the powdered sulphate. The dilutions of 1:100 and 1:200 gave distinct positive reactions, while the dilutions of 1:500 and 1:1,000 gave only very slight reactions.

The results of the latter test indicate that the best reaction can be obtained by using quinin bisulphate in a dilution of 1:10, as in this dilution no reaction occurred in the negative cases.

An effort was made to sensitize guinea-pigs passively by injecting the serum of the two persons who were hypersensitive. Two guinea-pigs were inoculated, one intravenously and one intraperitoneally, with my serum, the dose being 1 c.c. per hundred gm. Two were similarly inoculated with 0.5 c.c. per hundred gm. of body weight with the serum of Dr. Campbell. Forty-eight hours later, they were injected intravenously with 0.5 c.c. of a 1 per cent. solution of quinin bisulphate. The pigs injected with my serum died within half an hour. The pigs injected with the serum from Dr. Campbell remained alive. Two normal guinea-pigs were inoculated with the same dose, one of which died immediately, the other living about half an hour. This indicated that the amount of quinin

1. Thayer, W. S.: Adams-Stokes Syndrome.—Persistent Bradycardia, Involving Both Auricles and Ventricles, Remarkable Prolongation of the As-Vs Interval, Tr. Assn. Am. Phys., 1915, **63**, 77.

* From the Laboratory of the Pennsylvania State Livestock Sanitary Board.

injected was too near the lethal dose. The necropsy of these animals failed to show any lesions of anaphylaxis, the lungs having collapsed and the other organs appearing perfectly normal.

A second attempt was made to sensitize guinea-pigs with my serum. Two guinea-pigs were injected intravenously with 1 c.c. per hundred gm., and forty-eight hours later received 0.25 c.c. of a 1 per cent. quinin bisulphate solution. Both animals withstood the injection without showing any symptoms of anaphylaxis.

On account of the inability to sensitize guinea-pigs passively with the serum of those giving a positive reaction to the skin test, some question might arise as to the exact nature of these reactions; but as they were obtained only in those persons who were known to be susceptible, and as only a short time was required to produce the local symptoms with extremely small amounts of the drug, it is highly probable that the reaction is of an anaphylactic nature.

CONCLUSION

A skin reaction to quinin has been obtained which may be of practical value to the physician as an aid in determining the existence of an idiosyncrasy to this drug.

Thirty-Ninth Street and Woodland Avenue.

For the Adoption of the Metric System.—The American Association for the Advancement of Science at its 1917 meeting arranged a special conference on the subject of promoting the adoption of the metric system into practical usage in this country. Professor Kennelly of Harvard called attention to the simplicity of the two units of metric measurement, the meter and the gram, as compared with the numerous and confusing old style measures of length, area, volume, dry, liquid, cord, apothecaries, avoirdupois, troy, etc. A flagrant instance of the absurdity of the old measures is the bushel, which is both a measure and a weight, differing widely in different states of the United States. A bushel of rye, for instance, is 56 pounds in most states, 54 in California and 50 in Maine. A bushel of barley is 48 pounds in most states, 45 in Arizona, 46 in Oregon, 47 in Pennsylvania, Kentucky, Georgia and Alabama and 50 in California. A bushel of buckwheat is 40 pounds in California and 56 in Kentucky, a difference of 16 pounds, with many variations from these figures in the other states. Accurate, scientific work is measured by the metric system in all countries, but the United States, Great Britain and Russia still do not employ the system in practical everyday business. Since the beginning of the European war its use has widely extended in manufactures and commerce even in England and Russia, and manufacturers in the United States have been compelled to employ it in filling orders for war materials. The simplicity of the metric system is such that it is believed any intelligent child can learn and carry in his mind in three lessons the whole system, and that any reasonably intelligent adult should be able to master it in an hour or less of serious study. It is being rapidly introduced into medicine, is employed in annoting electrical units, and is in line with our decimal system of money.

New Instruments and Suggestions

A SIMPLE OPERATING FLUOROSCOPE

FOR AID IN REMOVAL OF METAL BODIES*

RALPH BOERNE BETTMAN, M.D., CHICAGO

Soon after we began work in Vienna, we realized that foreign bodies, such as bullets and metal fragments, were much harder to remove than one would expect, judging from the roentgenograms, various localizations, etc., and also that even those readily attainable required large, free incisions so that the tissues could be easily searched. We had the same experience which many of us have had at home with needles in the hands and feet, repeated so often, however, that we finally attempted to use the fluoroscope in conjunction with the other methods, and thus hit on this inexpensive apparatus, which is simply a light fluoroscope or cryptoscope which can be strapped to the head of the operator.

It is in the form of a hollow truncated pyramid, with a base consisting of a fluorescent screen 13 by 18 cm., the four sides of thin wood, cardboard or papier mâché, about 13 cm. high, and the top left open and so shaped that it fits over the eyes of the surgeon.

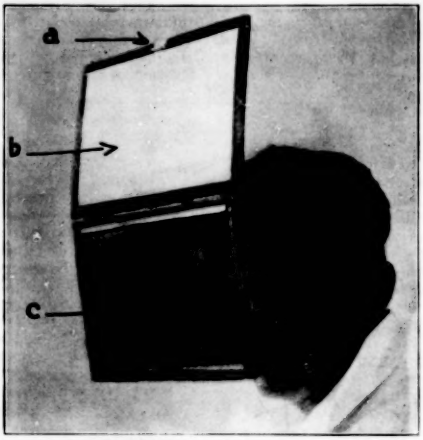


Fig. 1.—Operating fluoroscope: *a*, catch; *b*, fluorescent screen open; *c*, lead glass.

The fluorescent screen is on hinges, and under the influence of a small steel spring it flaps open, allowing the operator to see. When the screen is pulled down it is held in place with a catch, and the surgeon is looking into a light-tight box, the floor of which is converted into a fluoroscope as the Roentgen rays strike it. Pressing on a button releases the screen.

The edges fitting over the face of the operator are rimmed with black fur or plush, as are also the edges of the screen, so as to make the whole apparatus light tight.

In easy cases, or when there is a dearth of assistants, the surgeon is at once operator and roentgenologist; in other cases an assistant wears the cryptoscope. After the assistant is "scrubbed up," the cryptoscope, which has been covered with a sterile black cloth, is fastened to his head. The foreign body has been localized as nearly as possible with roentgenograms taken in two directions, or with a localization apparatus, and it has been decided where the incision is to be made. The patient has been placed on the Roentgen-ray table and covered with sterile linen, after the usual operating room technic. The assistant now closes the screen, the Roentgen-ray machine is started, and the assistant sees the foreign body as with the usual fluorescent screen and demonstrates its position with some metal instrument. The surgeon, working in ordinary light, makes his incision and cuts down under the guidance of the assistant, who is watching the operation through the fluoroscope. It will often happen that the assistant assures the operator he is on the bullet before the surgeon recognizes that the hard indurated mass which seems to elude his knife is not scar but a firmly encapsulated metal fragment. Most of the Roentgen-ray tubes will not stand long periods of continuous use. We therefore often localize

* From the Wisconsin Surgical Unit of the American Physicians Expeditions Committee, K. u. K. Reserve Hospital No. 8, Vienna, Austria (Surgeon in Chief, Dr. Joseph Rilus Eastman, Indianapolis).

the bullet, turn the current off, allow the surgeon to incise and work down in the direction indicated, and then from time to time switch in the current again, guiding him back in the right direction. When the surgeon is acting at the same time as roentgenologist, the method is practically the same. While he is operating, the screen is flapped open and when orientation is desired the screen is closed. In many cases when operating this way, after the first incision is made, the surgeon can separate the tissues by blunt dissection under the guidance of the Roentgen ray down to the bullet, grasp it and extract it in this manner. This is possible only when the foreign body has not had time to become encapsulated. It is hardly necessary to state that great care must be taken not to catch some important vessel or nerve at the same time. The bullet ought always to be approached with the blades of the clamp closed. The clamp is then carefully opened just far enough to grasp the bullet and carefully closed on it. If there is any difficulty in extracting the bullet, the surgeon must see where the obstruction is, enlarge the wound if necessary, with the screen of course released, and then extract the bullet so as not to do an injury.

We protect ourselves from burns by placing a 1 mm. aluminum filter over the diaphragm of the Roentgen-ray tube, and further by having a piece of lead glass inserted in the cryptoscope.

Fig. 2.—Operating fluoroscope with fluorescent screen closed.

We have found that operations with the aid of the operating cryptoscope—the name given the apparatus in Vienna—are performed much more easily and quickly than with any other method of localizing the bullet, that a much smaller incision can be made when a small incision is desired, and that the tissues are not so apt to be mauled as when the surgeon has to search for a small encapsulated body. We have practically discarded all of the customary localizing systems for the reason that bullets change their position to a surprising degree, owing to muscle tone, different position of the patient, gravity, etc., and a small, firmly encapsulated body can be in the wound itself and still elude the most skilled surgeon. We have repeatedly with the aid of our fluoroscope removed bullets in a few minutes for which one or two previous operations had been made in vain.

We claim no originality for this method of operating, but simply wish to emphasize its advantages. Professor Holzknecht has done much to popularize this method. He has constructed a beautiful but complicated and expensive apparatus with which, in conjunction with several Viennese surgeons, especially Professor Eiselsberg, he has obtained gratifying results. It will also be recalled that as long ago as 1904 Dr. Graschey constructed an operating monocular cryptoscope.

THE DODDS-PARKER SUSPENSION APPLIANCE

WILBURT C. DAVISON, A.B. (PRINCETON); B.A., B.Sc. (OXON.), BALTIMORE
Senior Demy, Magdalen College, Oxford; Rhodes Scholar, Merton College, Oxford, from State of New York

The accompanying illustrations show more or less clearly the mechanism of this apparatus. A large upright at each

Fig. 1.—Suspension appliance as used for a fractured femur put up in a Thomas splint.

end of the bed supports a horizontal crossbar from which are suspended the rails or tracks for the overhead trolley. This trolley is a rectangular framework provided on its upper surface with small suspension wheels which fit on the rails and allow the trolley to be moved forward and backward over the bed with little effort. On the under surface the trolley is fitted with numerous screw-eyes to which pulleys may be attached. Figures 1 and 2 show the suspension

Fig. 2.—Suspension appliance as used for a fractured femur put up in an extension splint.

appliance as used to support a fractured femur which has first been put up in a Thomas or an extension splint. The supporting ropes are attached at the upper and lower ends of the splint, and run first through the pulleys directly overhead and then through pulleys at the end of the trolley, and are there balanced by iron weights. The amounts of these weights of course vary for individual cases, but 6 pounds on each rope is usually sufficient exactly to balance the limb so that the patient can move it with minimum effort.

Figure 3 shows how the use of the appliance may be extended to the more severe cases in which the back as well as the lower limbs are injured. Here a small hammock which goes under and supports the shoulders is suspended from the two upper screw-eyes of the trolley. While it does not actually suspend the patient in midair, yet the hammock under the shoulders and the suspension attached to the splint on the fractured femur bear most of the patient's weight and vastly increase his comfort.

Fig. 3.—Suspension appliance as used for a fractured femur put up in a Thomas splint. The appliance is also used to support the back, which was severely sprained.

The benefits of such an appliance are obvious, and one needs but speak to a patient who is treated in this way to learn of the relief afforded. The patient can move his limb up or down at will, and also by raising himself slightly with his elbows can move up and down the bed.

The nurses or orderlies attending the patient profit immensely, for it is not necessary for them to lift and move the patient while changing dressings, arranging the bed, etc., for the patient shifts his position himself.

The therapeutic gain from the apparatus is not the least of its benefits, for by increasing one or the other of the weights or by changing the supporting pulleys from one set of screw-eyes to another, any desired rotation or abduction may be secured.

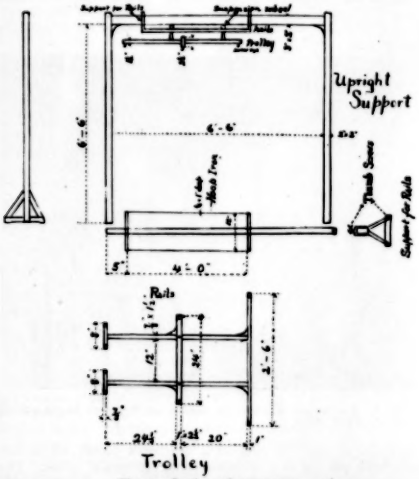


Fig. 4.—Section of apparatus.

The use of the appliance may be extended by attaching a horizontal crossarm half way up the upright at the foot of the bed. Then any pain caused by the pressure of the Thomas or extension splint in the groin may be relieved by elevating the foot of the bed and attaching to the end of the splint an additional rope which runs through a pulley on this crossarm and is balanced by a weight. In this way extension is secured and the patient can also move on the bed.

The cost of this apparatus is very slight, and any carpenter can make it, from the diagram (Fig. 4), which gives the various measurements.

923 North Broadway.

ATTACHMENT FOR THE STETHOSCOPE

LEWIS S. HILLIS, M.D., CHICAGO

Attending Obstetrician, Cook County and Provident Hospitals; Assistant Obstetrician, Chicago Lying-In Hospital; Instructor in Obstetrics, Northwestern University Medical School

Frequent observation of the fetal heart tones during the last part of the second stage of labor presents certain technical difficulties after the attendant is surgically prepared for the delivery. In breech labors in which the heart tones must be watched very carefully, it is always desirable and often necessary for the operator to observe the heart tones himself.

Attachment for the stethoscope facilitating the observation of heart tones.

In order to make this easily possible, an attachment for the stethoscope was devised which consists of a metal band such as is used on a head mirror, passing from front to back over the top of the head. The Y of the binaural stethoscope is fastened to the front plate of this band by means of a short spiral spring and a universal joint which is capable of being made rigid by a thumb screw. This permits proper adjustment of the ear pieces and holds the stethoscope in a position above the line of sight at right angles to the forehead. The spiral spring gives enough flexibility to the bell of the instrucent to make it easily adaptable to the surface.

An experience of several months with its use at the Chicago Lying-In Hospital indicates that it has the following advantages:

It gives easy and accurate control of heart tones.

After adjustment, no handling is required.

Heart tones are heard better, since there is bone conduction through the metal parts of the instrument, in addition to the air conduction of the ordinary stethoscope.

The bell may be pressed firmly against the abdominal wall without interference from muscle sounds.

RUBBER SINK STOPPER AND OVERFLOW DRAIN FOR ROENTGEN-RAY DARK ROOM

JACK WITHERSPOON, M.D., NASHVILLE, TENN.

Physicians who are engaged in Roentgen-ray work, and especially those who develop their own plates and films, will appreciate this contrivance to do away with the pan for washing plates. The ordinary No. 3 sink will accommodate 14 by 17 inches, chest plates, and 10 or more 8 by 10 smaller plates, and such a size sink should be in the dark room. It should be enameled for purposes of easy cleaning.

Rubber sink stopper and overflow drain; *a*, stopper; *b*, tube; *c*, tube vulcanized to stopper and ring cut out; *d*, sink with contrivance in position.

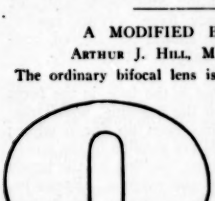
The contrivance is a rubber sink stopper and overflow drain cheaply and easily made. A 10 cent Daisy sink stopper, as illustrated, is purchased. This is a flat disk of rubber 4½ inches in diameter. Two inches of stiff rubber garden hose are obtained from the hardware dealer. The tube is vulcanized firmly on the sink stopper by the man who repairs automobile tires. The ring under the tube is cut out. One now has an overflow sink stopper which will adhere to the strainer of the sink by suction, and will keep 2 inches of running water in the sink.

216 Doctors' Office Building.

A MODIFIED BIFOCAL LENS

ARTHUR J. HILL, M.D., CANTON, OHIO

The ordinary bifocal lens is of no use to the presbyope who uses a headmirror or headlight. If he will have a 12 by 24 mm. segment of the proper strength cemented vertically on the center of his distance correction (as in illustration), he will have all the advantages of his near correction and be able to see at a distance by simply turning his head to one side or the other and looking in the opposite direction.



Modified bifocal lens.

A SIMPLE INCUBATOR

ARTHUR JULIUS SKEEL, M.D., CLEVELAND
Fellow of the American College of Surgeons; Associate Clinical Professor of Obstetrics, Western Reserve University, School of Medicine; Obstetrician, St. Luke's Hospital

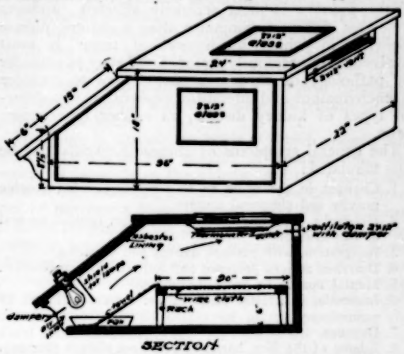
The success which we have had with an inexpensive and simple incubator, whch I devised for our use at St. Luke's, together with a number of requests from physicians, leads me to publish this description. The incubator as presented provides equable safe heat, adequate moisture, and a constant supply of circulating air. With ordinarily intelligent supervision it is absolutely safe.

On two points in its management emphasis must be placed:

1. The electric light bulbs must be shaded to protect the infant's eyes from the light.

2. The incubator must be kept at a higher temperature than that of the room air to insure circulation.

It consists of a large box with an air inlet opening near the base at one end, and a similar air outlet near the top at the other end. The heat is supplied by a row of electric lights (other heat units may be used, but light bulbs are always available) located at the air inlet; the heated air rises, passes over the child, and escapes at the upper or air outlet opening. This provides a constant current of warmed air. The air is moistened before it reaches the baby by means of a towel placed on a slanting rack. The lower end of this towel is in a pan of water on the floor of the incubator, and capillarity keeps the entire towel moist. The rising heated air strikes this wet surface and takes up moisture.



Incubator.

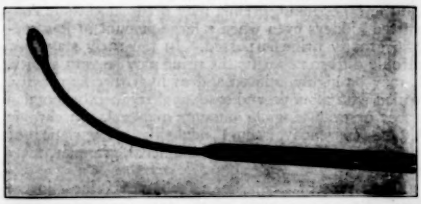
To guard against accident, we lined the wooden box with sheet asbestos. This also renders the box easy to heat. Glass panes in the sides and on the lid expose to view the baby, and a thermometer by which the temperature is regulated. The air inlet and outlet are provided with a slide or damper by means of which the size of the openings may be regulated.

The exact temperature at which the incubator is kept may easily be regulated by the number of lights kept burning.

AN INSTRUMENT TO AID RETROGRADE SOUNDING OF URETHRA

J. L. STEVENS, M.D., MANSFIELD, OHIO

This is an olive-tipped bougie, the curved part of which is a steel spring, which allows it to straighten during passage through a straight cannula. The bladder should contain 150 c.c. or more of fluid. A trocar and cannula are inserted into it above the pubes in the usual way, and the trocar is replaced by the bougie without allowing the fluid to escape. If the full curve is not desired in searching for the urethra, the spring part should not be entirely passed through the cannula. After the entrance to the urethra is found, the flexibility of the spring will allow the tip to follow the urethra.



Therapeutics

DISTURBANCES OF THE KIDNEYS

(Continued from page 849)

SYMPTOMS IN CHRONIC NEPHRITIS

An acute diffuse nephritis, in which the parenchyma of the kidneys is most seriously affected, produces somewhat different symptoms than a chronic diffuse nephritis in which the interstitial tissue is most involved. As previously stated, it is better to consider the pathology of chronic nephritis than to consider parenchymatous and interstitial nephritis as two different types of kidney disease, as neither type occurs alone.

The general symptoms of chronic nephritis may be thus tabulated:

1. Changes in the urine as to frequency, color, specific gravity and abnormal content.
2. Headache, generally occipital, but often frontal, general or hemicranial.
3. Indigestion, with perhaps nausea and vomiting.
4. Diarrhea attacks preceded and followed by constipation.
5. Mental apathy or great irritability.
6. Insomnia, in a later stage of the disease followed by somnolence.
7. Dyspnea.
8. Edema of the face, hands or feet (not always present).
9. Intermittent eye and ear disturbances.
10. Enlargement of the heart (hypertrophy, dilatation).
11. High blood pressure.
12. Neuralgias.
13. Anemia.
14. Retinal change.
15. Dropsy or marked localized exudate (many patients show no edema or dropsy).
16. Terminal inflammations (pericarditis, etc.).
17. Uremia (convulsions and coma).

The amount of urine passed varies with the different forms of nephritis; in interstitial nephritis, or so-called contracted kidney, with high blood pressure, typical Bright's disease or cardiovascular-renal disease, the amount of urine passed in twenty-four hours may be large, especially the amount passed during the night. A marked diminution in the amount of urine passed, especially if the specific gravity is low and the excretion of solids and toxins is not sufficient, causes headache, restlessness, insomnia, indigestions, myalgias, muscle twitching and, if the excretion is sufficiently diminished, symptoms of uremia. Suppression of urine, however, may last several days without uremia. On the other hand, uremia may occur in chronic contracted kidneys even when a large amount of low specific gravity urine is passed. In the early stages of chronic diffuse nephritis the urine may be very scanty. It may be highly colored and of high specific gravity, loaded with albumin and casts, and frequently contains traces or even tangible amounts of blood. In chronic diffuse (parenchymatous) nephritis, all varieties of casts may be found—hyaline, epithelial, granular, fatty and waxy.

Every type of headache, a feeling of fulness in the head, dizziness, ringing of the ears, irritability, restlessness, insomnia, loss of memory, stupidity or actual somnolence may occur in different stages and in the different types and conditions of chronic nephritis. Head symptoms may be the first indications of this disease, especially of the interstitial variety. The patient may awaken every morning with a headache or headaches may recur as acute attacks, accompanied by vomiting, a diminished amount of urine, and generally an increased blood pressure. Cerebral apoplexy may occur with any type of chronic nephritis, but it is most frequent in the interstitial variety.

Dyspnea is a very frequent symptom in chronic nephritis. It may be due to disturbance of the cerebral circulation, slight acidosis, hypertension or cardiac disability.

Gastric indigestion is usually a symptom of chronic nephritis. This condition is accompanied by anorexia with a special distaste for food in the morning. The patient complains of a bad taste in the mouth, especially noticeable in the morning, and of a bad tasting fluid which collects in the mouth during the night. The tongue is more or less coated, and often typically coated in irregular patches with small regions from which the coating is absent. This condition of the tongue is typical, though not pathognomonic, of advanced chronic nephritis. There is more or less distress after eating, with flatulence, pyrosis, nausea or vomiting, according to the ability of the kidneys to excrete and to the sufficiency of the circulation. Insufficient circulation with damming back of blood in the portal system, combined with liver congestion and impaired kidney function, causes gastro-intestinal indigestion which is hard to combat. Frequently vomiting resulting from this condition is one of Nature's methods of relieving the system of toxins, the kidneys being insufficient.

Irregular attacks of diarrhea, not excused by mistakes in diet or changes of temperature, often occur in chronic nephritis. These attacks usually occur when the amount of urine is scanty or the excretion of solids is diminished, and is another of Nature's methods of eliminating a certain amount of toxic products. This relief of vicarious excretion, however, is only a momentary help to the system. On the other hand, constipation is a menace in chronic nephritis, as congestion of the portal circulation, and consequently of the liver and stomach, may have serious results. However, while constipation should be relieved, profuse purging, except occasionally, is not advisable, particularly if the heart is weak.

Edema is usually first noted in the face, in the form of puffing under the eyes in the morning, which disappears after the patient has been up for a while; sometimes one or both hands are swollen in the morning, and there is perhaps some swelling of the hands or feet in the late afternoon and evening. Backache, perhaps due to edema of the tissues in the lumbar region, may be evident in the morning. In the later stages of the disease edema may be present in any part of the body, located either symmetrically or asymmetrically. It may persist all day, general anasarca may develop, and there may be an exudate into various cavities of the body. On the other hand, when the interstitial type of nephritis is predominant and the heart is sufficient, the disease may progress to uremia and death without evident edema.

The eyes may show numerous symptoms and signs in nephritis. There may be eye-strain headaches, momentary eye blurring, or things may "turn black before the eyes," as the patient describes the condition, such blurring lasting but a moment. There may be neuroretinitis or hemorrhages into the retina, that is, typical nephritic retinitis; and there may even be fatty degeneration of the retina. Albuminuric retinitis, which simply means retinitis associated with albuminuria, is a serious symptom and foreshadows an unfavorable development of the case.

The patient frequently experiences ringing in the ears or partial loss of hearing, probably most frequently due to arterial degenerations or to high blood pressure, and less frequently to central brain disturbances or to some nerve lesion in the internal ear.

If chronic nephritis develops rapidly, the heart may not be much hypertrophied, and cardiac weakness may be evidenced from the beginning. If chronic nephritis develops slowly — unless the heart is degenerated or has been impaired by some lesion — the left ventricle, especially, becomes greatly enlarged in its effort to overcome the increased resistance in the arterial system and the increased blood pressure. This is Nature's method of compensation to compel enough urine to pass through the diseased kidneys to effect sufficient elimination. It can readily be seen that the more slowly chronic nephritis develops, the more circulatory compensation will develop. In cardiac disease, especially in valvular lesions, with long continued sluggish circulation in the veins, particularly of the abdomen, congestion of the kidneys and a slowly developing diffuse nephritis occur. We then have a chronic inflammation of the kidneys superimposed on the heart lesion. This type of kidney disturbance will often greatly improve, even when apparently serious, with treatment aimed to improve the circulation.

A frequent type of chronic nephritis, with the interstitial type predominating, is that which is now recognized as cardiovascular-renal disease, or true Bright's disease. This slowly developing insidious nephritis is preceded by a long period of hypertension and cardiac hypertrophy, and is soon associated with more or less chronic myocarditis. The time to impede the progress of this disease is during the stage of previous hypertension. The manner of its final termination — whether by apoplexy, angina pectoris, cardiac dropsy, or uremia — depends on which of the three organs affected is most diseased. The danger to the heart and to the cerebral arteries through high blood pressure is well understood, and the necessity of generally lowering hypertension, whether or not the kidneys are much involved, is now generally recognized. A systolic pressure of over 150 mm. at any age should cause the patient to be carefully examined to determine whether or not an attempt to reduce this pressure would be wise. A systolic pressure of over 200 mm. has long been supposed to indicate kidney disease. This is not always true, but it is a pretty safe working rule to suspect the kidneys when the pressure is at such a height. The most significant indication of kidney insufficiency is a diastolic pressure of 120 mm., and if that pressure is over 110 mm. there must be serious doubt as to the condition of the kidneys. Any diastolic pressure of 110 or over should be reduced, if possible. If the diastolic pressure is below 100 mm., even if the systolic is 160, there may be no need of attempting to lower the pressure, but a systolic pressure above 170 requires such an attempt to be made. If a previous high pressure becomes suddenly diminished without treatment, myocardial weakness has developed and more or less dilatation will soon be in evidence. If treatment causes too great a drop in blood pressure, especially in the systolic pressure, the treatment is too strenuous, and the patient feels weak and incompetent.

A frequent condition in chronic nephritis is pain in one or more nerves, and an actual neuritis may be experienced. These pains probably are frequently caused by an imperfect elimination of irritants or toxins from the blood, and some particular nerve or nerves subjected to injury, muscle strain or occupation tire is the first nerve or set of nerves to be affected. Before any local treatment is of much avail, the kidneys and blood must be in the best possible condition. If the patient is uremic, neuralgic pains may be so intense as to require hypodermic injections of morphin.

There probably will not be much pain in the region of the kidneys in chronic nephritis, although there may be a backache resulting from some edema in the tissues of the back, which will be especially noticeable on arising in the morning. This kind of backache usually disappears soon after the patient arises. A pain in the kidney itself is probably due to a surgical condition, such as a calculus, tumor, or some distention of the pelvis of the kidney.

The stage in chronic nephritis at which anemia will occur depends on the amount of albumin lost, the oozing of blood from the kidney, and the disarrangement of digestion and assimilation. Besides the direct loss of nutriment from the blood and the direct loss of blood corpuscles, the toxins circulating in the blood probably interfere with the nutrition of the bone-marrow, and the red blood corpuscles are probably not produced in normal numbers, or at the normal rate. In the treatment of chronic Bright's disease, thoughtlessness is frequently displayed in not protecting the blood from deterioration. To relieve the irritation of metabolic substances in the kidneys, and other signs of toxemia, too much purging is resorted to, and a rigid diet (withdrawal of all meats) too long continued. If it is advisable not to allow a patient meat, iron must be given, and he should receive enough vegetable proteins to keep up his normal metabolism; otherwise he will become anemic from the treatment alone.

Terminal inflammations are liable to be associated with uremic conditions. By a terminal inflammation is meant some associated condition which would probably not cause death under ordinary conditions, but which, when associated with chronic nephritis, is dire and fatal. A simple infection like tonsillitis, grip, a slight infection of the bladder, slight prostatic disturbance, and acute infections, such as pneumonia, may rapidly increase the seriousness of chronic nephritis, and the patient may die of uremia or of a combination of the two conditions. Edema of the lungs in these associated conditions is of frequent occurrence. Pleural exudate, pericardial exudate or ascites may rapidly develop with the fever process. The amount of urine excreted may rapidly diminish and uremia develop, whereas if the acute condition had not occurred, the chronic nephritis may have continued slowly advancing for years.

Besides the cerebral symptoms already mentioned, there is occasionally great mental depression verging on melancholia, and frequently excessive irritability and a discouraged and pessimistic frame of mind. There may be loss of mental fixation, poor memory, slight momentary attacks of aphasia, lack of good judgment, and a tendency toward repetition. These patients are often easily fatigued by either physical or mental activity. These symptoms usually occur with the arteriosclerotic or senile kidney.

The relation of acidosis to dyspnea has received considerable study. Some investigators believe it is a prominent cause of dyspnea. Acidosis, however, is not the only cause of dyspnea in cardiorenal disease; nor is this disease necessarily accompanied by dyspnea. Furthermore, the amount of acidosis does not seem to be related to the nonprotein nitrogen retention.

(To be continued)

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SATURDAY, MARCH 24, 1917

THE TOXEMIA OF INTESTINAL OBSTRUCTION

The nature of the toxemia of intestinal obstruction has been a subject of interest and debate in the past few years. The clinician has the problem presented to him in practice repeatedly in most acute forms; the laboratory worker is perplexed by the apparently irreconcilable conflicts of experience and experiment. The concentration of the energies of a number of capable American investigators on the questions raised is certain to bring clarity into the matter before long; indeed, the accumulating evidence begins to show that more than one factor undoubtedly is responsible for the death from obstructed intestine. When the great mass of experimental data is once critically evaluated, a rational explanation is likely to be forthcoming.

In the past, individual schools have dwelt too exclusively on a single aspect of the problem. Three classic explanations were early devised for death in obstruction: first, infection; second, nervous reflexes; third, intoxication. The last explanation has been advanced in two forms, intoxication being explained as due to noxious substances of bacterial origin in the obstructed bowel, or as the result of an actual toxic secretion by the glandular structures of the alimentary tract.

Whipple,[1] who has been prominent in the study of this problem, has advanced the theory that the intoxication of intestinal obstruction and closed intestinal loops is due to the absorption from the intestinal mucosa of a definite proteose. He believes that the evidence for the intervention of bacteria in the situation is not at all conclusive, whereas there can be no question that the intestinal mucosa is essential to the production of the poison. Bacteria alone cannot form it.

A recent contribution[2] stimulates interest anew, and is likely to provoke further critical discussion of the question. In confirmation of the results of previous investigators, it has been found that dogs with an isolated closed loop of duodenum or jejunum die in from forty-eight to ninety-six hours, in most cases with perforation of the isolated loop and general peritonitis. But there is usually no excessive vomiting and hence no fatal dehydration of the body tissues. The dehydration factor has been made responsible by some of the investigators for the severe symptoms of intestinal obstruction. When the isolated and closed loop of the jejunum is sterile, complete occlusion of the blood vessels to the isolated loop has no effect on the dog; but if the loop is not sterile, the occlusion of the circulation in the loop causes death in from twenty-four to forty-eight hours with the usual symptoms of complete intestinal obstruction.

An abundant series of experimental observations has seemed to the Chicago physiologists to warrant the following conclusions:

Closed intestinal loops in which the bacteria are first removed are not incompatible with life. Closed intestinal loops in which bacteria are present but in which tissue necrosis is prevented are not incompatible with life. Closed aseptic intestinal loops in which the blood supply is completely shut off are not incompatible with life. The normal secretions of the duodenum and jejunum are not toxic when allowed to drain into the abdomen cavity.

These results, we are reminded, do not support the theory of Draper of a normal toxic secretion of the duodenal mucosa, neutralized by the jejunal mucosa, or the perverted secretion theory of Whipple. In obstructed loops of bowel, occlusion of the circulation by distention from accumulated secretion may easily arise. Necrosis follows, and bacterial toxemia completes the story. Thus the Chicago investigators conclude that bacterial activity plus the necrotic tissue or the result of the action of bacteria on necrotic tissue are the important factors in the rapid death in simple closed intestinal loops.

1. Whipple, J. H.: Intestinal Obstruction a Proteose Intoxication, The Journal A. M. A., Aug. 7, 1915, p. 476.
2. Dragstedt, L. R.; Moorhead, J. J., and Burcky, F. W.: The Nature of the Toxemia of Intestinal Obstruction, Proc. Soc. Exper. Biol. and Med., 1916, 14, 17.

THE PANCREAS AND MUSCLES IN SUGAR METABOLISM

In the current of the sciences, just as in the life of man, von Fürth[1] wrote not long ago, there are periods when every good intention and the most honest effort are insufficient to make any decisive and productive progress possible; evil days when ability is compelled to employ a good part of its innate energy to keep from sinking into dejected inefficiency. Then suddenly some new event changes the situation and brushes aside the impediments which have opposed the free development of the long accumulated latent energy. At once a period begins of heightened, feverish activity which endeavors to make up for all that was missed in the dull times of stagnation. The discovery of the relation of the pancreas to diabetes represents one of these unusual events. Since its announcement in 1889 there has been the liveliest discussion as well as a truly enormous amount of inves-

1. Von Fürth, O.: The Problems of Physiological and Pathological Chemistry of Metabolism, Philadelphia, 1916, p. 247.

tigation directed to the interpretation of the unique relationship which makes carbohydrate metabolism in the body concerned with a gland formerly supposed to be involved solely in the secretion of a digestive juice.

Extirpation experiments on animals established the essential facts; histologic studies, particularly in relation to the islands of Langerhans, furnished important contributory evidence; blood transfusion, parabiosis and other physiologic technics have been devised to unravel the underlying factors; the biochemistry of hormones and enzymes and the methods of immunology have furnished analogies for tests in vivo and in vitro — and yet we are still compelled to ask what part the pancreas plays in the utilization of sugar. Does the pancreas furnish an internal secretion; and, if so, how does the latter function? Does it supply an activator to facilitate the disruption or oxidation of the sugar molecule? Or is it merely concerned with a proper mobilization of carbohydrate, working perhaps in harmony with other secretory agencies in the body?

To ask these questions is a confession of the ignorance which we must admit of one of the most fundamental problems of physiology and pathology. When older methods of inquiry are exhausted without furnishing a decisive reply, and when conventional points of view fail to lead to new advantages, every novel experiment or mode of approach is heartily welcomed. As the muscles with their heightened local demand for energy doubtless are the seat of utilization of sugar, it has frequently been suggested that the pancreas furnishes something which facilitates the destruction of the carbohydrate in muscle. The isolated surviving heart has been used by a number of investigators as an appropriate muscular organ for such studies; but there are great discrepancies between the findings of different workers with respect to such questions as the comparative sugar utilization of the heart of the normal and the diabetic subject, or the effect of pancreatic extracts on such muscular metabolism.

The reason for these disagreements, often due to a faulty experimental technic, need not be related here. The latest attempt[2] to solve the difficulties has benefited by the errors and lessons of the past in the attempt to gain some evidence as to the possible interdependence of pancreas and muscles in sugar metabolism. The new experiments conducted in the Hunterian Laboratory of Experimental Pathology at the Johns Hopkins University indicate that the pancreas, when perfused aseptically with Locke's solution containing physiologic concentrations of glucose, does not alter the reducing properties of the solution. This means that the sugar itself is not changed in this organ. The pancreas, however, seems to supply to the perfusing fluid circulating through its arteries something which in some way brings about a utilization of sugar by a typical muscle, such as the heart, to an extent which does not occur with the cardiac musculature unaided. This was ascertained in trials in which the isolated heart and pancreas were simultaneously perfused with the same fluid.

This newly discovered but unisolated and unidentified pancreatic substance possesses some of the characteristics of an enzyme. It is inactivated by heat; it is unstable; it acts in small amounts; it accelerates a reaction which otherwise proceeds at a slower speed. These are not the distinctive properties of a stable hormone. Sugar actually disappears, presumably by oxidation or hydrolysis. The question naturally arises as to whether the hypothetic substance is identical with the long postulated internal secretion of the pancreas so essential to carbohydrate metabolism. Clark says, with appropriate reserve, that though the outcome of his work involves observations on the heart and pancreas isolated from the numerous interrelating factors usually occurring in the body, the evidence suggests at least that the substance or substances obtained experimentally by perfusing the pancreas may be concerned in the normal activity of that organ on sugar metabolism.

2. Clark, A. H.: The Interrelation of the Surviving Heart and Pancreas of the Dog in Sugar Metabolism, Jour. Exper. Med., 1916, 24, 621.

THE PRINTED PAGE AND TIRED EYES

Of the varied factors which enter into life and contribute to the fatigue which sets the physiologic limit to continued activity, some seem to be sufficiently emphasized while others are almost always overlooked or underappreciated. The bodily weariness which attends the vigorous use of the skeletal muscles in work or in play is generally so insistent for recognition that we appreciate its significance and promptly give heed to it. In addition to these muscles, however, we are constantly depending on our organs of sense to furnish the data which determine in large measure the entire course of daily life not only in its physical but also in its mental aspects. Without sight, touch and sound — not to mention the lesser senses — most of what is valued in human experience and performance is lost. Nevertheless little attention is usually paid to the possibility of fatigue of the sense organs and the functional structures associated with them.

Perhaps this statement as to the current indifference to possible overwork of our organs of sense should be modified in reference to the eye, for it is not unusual to hear of the existence of eye-strain. It has been well stated that the strain of modern life is sometimes special rather than general, so that strain comes on some organ or muscle. Indeed, industry has become so specialized that the worker may strain one part of the body while other parts are in need of exercise. No one can bring the charge of lethargy to the eye, even in the most phlegmatic person. Whatever may be the condition of the rest of the body during waking hours, the organ of vision is almost continuously "on the job."

A little physiologic reflection will make it evident that the proper use of the eyes depends on a diversity of conditions in part personal and in part environmental. The need of suitable illumination is abundantly recognized; but the adequacy of the light factor is governed in no small measure by the situation. The light of the stars on a clear evening may easily suffice to enable us to avoid large obstacles in our path. In moonlight the problem of orientation becomes much easier. A driver or a farm laborer can comfortably continue his usual activities under conditions of waning light in which a watch maker, a type setter or a copyist has been forced to abandon his assigned task owing to the inadequacy of the illumination. In other words, the use of the eyes is limited to the available light, the requisite intensity of which in turn depends on the size of the objects which engage the attention of the person, the color of these objects, and the speed with which they must be envisaged. In view of the obvious fact that the use of the eyes is fundamental in daily life, it is surprising that the hygiene of the organs of vision, particularly the determination of the most appropriate conditions for their healthy functioning, receives so little popular consideration.

Let us examine the immediate problem somewhat more closely. Both surplus and deficiency of light may lead to harm for the eye; but the dangers from the lack of adequate illumination are apt to be the more frequent. The work of seeing is rendered more difficult, so that a strain ensues. Perfection of vision is promptly impaired by diminished illumination. Under these conditions it becomes necessary to approach nearer to the object in order to see it distinctly. The work of ocular accommodation is greatly increased. The muscles of accommodation are exercised unduly. In young eyes myopia becomes one of the untoward consequences. It is unnecessary to carry the analysis farther to indicate the hygienic import of the question of illumination. A recent book, in discussing the subject, says:

> Eye-strain is to be prevented by scientifically adapted spectacles, by care to secure the right kind of illumination, and in some cases by systematically resting the eyes. . . One should be especially careful not to read in a waning light or, on the other hand, to read in the glare of the sun.[1]

Reading undoubtedly furnishes one of the major occupations for the eyes; yet, as will be seen from the foregoing typical quotation, one will search almost in vain for any consideration of the size of the object concerned in this employment of eyesight. Strangely it has remained for others than the students of hygiene to call attention to the unfortunate make-up of much modern printed matter from the standpoint of acceptability to the eye. It requires little serious reflection to appreciate the fundamental importance, for eye health, of the legibility of type. The librarian of the St. Louis Public Library, Dr. Arthur E. Bostwick,[2] is the latest to bring the seriousness of the situation to public attention. Tired eyes, he says, belong for the most part to those who have worked them hardest; that is, to readers who have entered on middle age or have already passed through it. At this age we become conscious that the eye is a delicate instrument — a fact which, however familiar to us in theory, has previously been regarded with aloofness. Now it comes home to us. The length of a sitting, the quality, quantity and incidence of the light, and, above all, the arrangement of the printed page become matters of vital importance to us. A book with small print, or letters illegibly grouped or of unrecognizable shapes becomes as impossible to us as if it were printed in Chinese.

Legibility is not merely a matter of the size of type. Form, heaviness of face, the width of the margin around the letter, position in the letter group, and the shape and size of adjoining letters also require consideration. For "tired eyes" the size factor would appear of overwhelming importance except where the other elements make the page fantastically illegible. Such, all too few, studies as have been made on this subject, particularly in relation to schoolchildren, for whom alone the need of large type is recognized in relation to the undeveloped eye, indicate, according to Bostwick, that 10-point type is the smallest size fit for any one, however good his sight.[3]

The recommended sizes of type run from 30-point, for 7 year old children, to 10-point or 11-point for persons more than 12 years old. Bostwick remarks that this would bar much of our existing reading matter. In the gathering for "tired eyes" of a decidedly unique collection of books in large type for the St. Louis Library, 14-point was decided on as the standard. Out of nearly 400,000 volumes it was found by diligent search that only 150 would answer this description. The final result of the St. Louis effort has been an accumulation of a few more than 400 volumes, despite the fact that 1,000 publishers in this country are annually issuing 11,000 volumes, to say nothing of the British and continental output.

In view of the omnivorous reading habits of the American public, one other factor deserves notice here. The possible influence of short lines on legibility deserves consideration in the propaganda for sane typography. Quoting Bostwick, we may recognize that the eye must jump from the end of each line back to the beginning of the next, and this jump is shorter and less fatiguing with the shorter line, though it must be performed oftener. The adaptation of the eye to a standard length of line is surely not without moment. New lengths, as one finds them in special magazines or

1. Fisher, Irving, and Fisk, E. L.: How to Live, New York, 1915, p. 93.

2. Bostwick, A. E.: Books for Tired Eyes, Yale Rev., January, 1917, p. 358.

3. A "point" is the current standard unit of measure for the size of type bodies. It represents about 0.013 inch. The editorials in THE JOURNAL are printed in 10-point type with 2-point leads between the lines; this footnote is in 6-point type.

other publications, are not so easily read. Bostwick ventures the opinion that the reason for our continued toleration of the small type used in the daily newspapers is that their columns are narrow, and still more, that these are everywhere of practically uniform width. If books, magazines and reading are to remain as our inheritance, what better conservation movement can we initiate than one to ascertain and introduce rational standards for the printed page?

THE HEMOGLOBIN CONTENT OF THE BLOOD IN HEALTH

There is perhaps no fluid or tissue of the living body with which the clinician is more seriously concerned than the blood. On the quantity of certain of the blood constituents found in individual cases some of the most important deductions with respect to diagnosis and prognosis are often based. It will doubtless, therefore, come as a surprise to many who are almost daily concerned with questions involving the concentration of one or the other of the blood constituents, to learn that few adequate analyses are at present available. Thus three of the most recent and representative textbooks on physiology and physiologic chemistry still quote the old data of C. Schmidt published in 1850 in elucidation of the quantitative composition of human blood.

In pointing to the paucity of dependable knowledge, particularly with respect to the content of hemoglobin in human blood, Williamson[1] rightly complains that what facts are possessed on the subject date mostly from the work of Leichtenstern.[2] He says that to the thoughtful clinician it has long been a matter of keen regret that the examination of the blood which is perhaps most frequently made in routine practice, namely, the estimation of the percentage of hemoglobin, is the one from which we generally derive the most unsatisfactory results. Aside from the glaring defects in some of the instruments in common use, this has been due to the fact that we have had few accurate data as to the variations in the amount of hemoglobin at different ages. It is currently stated, in contrasting the two sexes, that the amount of blood corpuscles is somewhat smaller in woman's blood; and the average amount of hemoglobin is given as 133 per thousand, in contrast with 146 per thousand for man's blood. Several investigators have pointed out that fetal and infant blood is richer in erythrocytes and hemoglobin than is the blood of the mother. The highest content of the blood pigment has been described as occurring immediately, or soon after birth. In man the figure for hemoglobin has been said to reach 210 per thousand at this period. The older statistics indicated that it gradually sinks to about 110 per thousand between the fourth and eighth years, with a second maximum of from 137 to 150 per thousand at the twentieth year. After the forty-fifth year, according to Leichtenstern and to Otto, the content slowly decreases. One also finds long cherished and reiterated indefinite statements regarding a gradual increase in the amount of hemoglobin in the blood of man when his diet is "enriched," and the blood of lean persons is reputed to be somewhat richer in hemoglobin than blood of corpulent ones of the same age.

In view of so much that is inadequate and uncertain, based as it is on a limited number of observations made with the older technic and less rigorous methods of analysis, the contributions of Williamson are to be welcomed. His new hemoglobin estimations have been made by the exceptionally accurate method of spectrophotometric analysis. Covering as it does the blood of more than 900 healthy persons of both sexes, at ages ranging from 1 day to over 76 years, this wealth of new statistics overshadows previous compilations.

A detailed examination of these elaborate analyses would be out of place here. Certain generalizations derived from them deserve emphasis, however. The amount of hemoglobin in the blood of normal persons varies greatly at different ages, and follows a well defined curve. These age variations are so great that, in determining whether a given blood contains more or less hemoglobin than normal, it is imperative to consider the age. These variations are greatest from birth to the sixteenth year. Between the ages of 16 and 60 there is a marked difference between the two sexes, this difference growing less after the sixtieth year. In view of these facts, Williamson says it is evident that hemoglobinometers should be standardized in absolute terms, most conveniently in grams of hemoglobin per hundred c.c. of blood. Because of the superior accuracy attained, it is highly desirable that the standardization of the hemoglobinometers should be spectrophometrically controlled. Whether a given blood contains a greater or less amount of hemoglobin than the normal can be determined only by a comparison of the absolute value obtained by a hemoglobinometer thus standardized, with the normal value for that age and sex as now available from Williamson's statistics.

1. Williamson, C. S.: Influence of Age and Sex on Hemoglobin, Arch. Int. Med., October, 1916, p. 505.
2. Leichtenstern: Untersuchungen über den Haemoglobingehalt des Blutes in gesunden und kranken Zuständen, 1878.

Potash.—A company making Portland cement at Durham, Ont., according to *Commerce Reports*, March 9, is now turning out as a by-product from the feldspar used from twelve to sixteen tons of potash daily. Both muriates and caustic products are produced, the former being said to be an almost pure product. Even the dust and gases of the plant are trapped, in which there is said to be 5 per cent. of potash, which is used for fertilizer. The chemist of the plant says that every cement plant in Canada should, within the next five years, be producing potash as a by-product. Immense deposits of feldspar are found in Canada, which contains at least 10 per cent. of potash, of which 86 per cent. in a pure form is collected. The cost of manufacture is said to be less than the freight charge per ton on that heretofore coming from Germany.

Current Comment

CONSERVE THE MUCOUS MEMBRANES

The mechanical efficiency of the sound skin as a protective agent against the invasion of the body by microorganisms is obvious. Little credit for a similar protection is usually accorded to the mucous membranes. It is true that the latter do not furnish the same degree of resistance or immunity which the external coverings of skin afford. Nevertheless it ought to be realized that many organisms can be implanted with impunity on mucous membranes, especially on those portions which are engaged in the production of mucus or which are provided with a ciliated epithelium as a safeguard. The underestimated usefulness of the mucus secreted by the membranes of the nasal cavities is more easily appreciated when the circumstances to which they are exposed are related. It has been estimated that under normal conditions of life in large cities, from 15,000 to 20,000 bacteria enter the nose in an hour's quiet respiration. Yet under normal anatomic and physiologic conditions few of these organisms ever reach the nasopharynx in a viable condition.[1] To some extent at least the mucus secreted is responsible for this. It is reputed to have an inhibitory if not an actual bactericidal effect on germs;[2] and a liter of mucus per day has been reported as representing the amount of available secretion.[3] The highly specialized epithelium of the trachea and nose is further effective as a protection against unorganized dust. Perhaps if this were more universally recognized and taught, ciliated mucus-secreting membranes would be treated in a less irritating manner. How many physicians realize that when the ciliated cells are destroyed by caustics, operative procedures or disease, they are frequently replaced by squamous cells, and the efficiency of the nose as a protective organ is correspondingly impaired?

1. Crowe, S. J.; Watkins, S. S., and Rothholz, Alma S.: Relation of Tonsillar and Nasopharyngeal Infections to General Systemic Disorders, Bull. Johns Hopkins Hosp., 1917, **28**, 1.
2. Thompson and Hewett: The Fate of Micro-Organisms in the Inspired Air, Lancet, London, 1896, **1**, 86.
3. Bloch, E.: Physiological Investigations of Nasal Respiration, Arch. Otol., 1888, **17**, 279; 1889, **18**, 1.

WORKMEN'S COMPENSATION LAWS UPHELD

Any question as to the right of the states to enact workmen's compensation laws has been permanently settled by the recent decision of the United States Supreme Court. Not only has the right and power of the state to enact such legislation been affirmed, but the three leading types of workmen's compensation legislation have also been declared legal. In Iowa, the law is elective, both employer and employee being at liberty to elect whether to work under the statute or under the common law principles regulating relations between employer and employee. But inducements are offered to the employer to come under the law by specifically removing the three common law defenses, namely, the fellow servant doctrine, the voluntary assumption of risk on the part of the employee, and contributory negligence on the part of the injured person; while it also offers inducements to the employee in the form of a fixed schedule of compensations for injuries in place of the uncertainty of a jury verdict or a court finding. The New York law is essentially compulsory, but allows the employer to carry his own risk or to insure in either a private insurance company or a state fund; while the Washington law is not only compulsory in its application, but much broader in its provisions, including domestic and farm laborers as well as industrial employees, and requiring all employers to insure in the state fund without admitting private companies in any way. All three of these laws were before the court for review, and they were all sustained so far as constitutionality is concerned. This decision settles the right of the state to enact workmen's compensation laws in any of the three forms which were before the court. The interest of physicians, therefore, will hereafter center in the securing of equitable terms and conditions for medical services.

CONTROL OF INTESTINAL BACTERIA

The use of various kinds of buttermilk and even of tablets containing lactic acid bacilli to prevent excessive intestinal putrefaction is more or less common. The followers of Metchnikoff maintain that by the use of such cultures it is possible to change permanently the intestinal bacterial flora in such a way as to reduce or eliminate the so-called putrefactive types of organisms and to increase the aciduric or lactic acid type, resulting in a decreased production of putrefactive products, such as indol, skatol and oxyacids, with a corresponding betterment of the conditions arising from the action of these substances. Hull and Rettger[1] have recently completed a comprehensive study of the factors involved in the change of the types of intestinal bacteria. They find that the direct feeding of bacterial cultures has almost no influence on the intestinal flora, even when preceded by immunization. The results of the latter procedure are not regarded as conclusive. The significant factor appears to be food. Inhibition of intestinal putrefaction was shown a number of years ago to be obtained by the substitution of carbohydrates for proteins in the diet, and a number of investigators have noted the partial disappearance of organisms of the type of *B. coli* and *B. welchii*, together with the increase of those of the lactic acid type in connection with the continued inclusion in the diet of a large amount of milk; but in some cases the results were attributed to other substances, for example, glucose, introduced with the milk. Milk is now shown to contain the important constituent, but with this food alone, while "a transformation of flora takes place," a "complete simplification" is not attained. Experiments with lactose feeding, however, show striking results leading inevitably to the conclusion that this sugar is essential for a permanent change in the intestinal flora, with the establishment of aciduric or lactic acid organisms, such as *B. acidophilus* or *B. bifidus*. Other carbohydrates have little effect. Milk, therefore, apparently acts through its lactose

1. Hull, T. G., and Rettger, Leo: The Influence of Milk and Carbohydrate Feeding on the Character of the Intestinal Flora, IV, Diet Versus Bacterial Implantation, Jour. Bacteriol., 1917, **2**, 47.

content. The aciduric type of bacteria finds its most favorable environment when lactose is present, as such, in the intestine. Lactic acid is not a factor. The beneficent action of milk cultures also is dependent on the lactose and not on the bacteria, for organisms of the type of *B. acidophilus* increase in the intestine rather than the bacteria taken with the milk. According to these writers, then, the control of the intestinal bacterial flora lies with the food — a combination of milk and lactose forming "the most practical and effective diet, at least for man."

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Addition to Medical School.—Work on the operating amphitheater for the School of Medicine of the University of Alabama, Mobile, began March 1. The money required for the building, $10,000, has been appropriated by the city of Mobile.

State Society Meeting.—The annual meeting of the Medical Association of the State of Alabama will be held in Montgomery, April 17 to 20. Dr. William J. Mayo, Rochester, Minn., is on the program for an address on "The Importance of Septic Infection in the Three Great Plagues."

Officers Installed.—At the annual meeting of the Medical Society of Mobile County the following officers were installed: president, Dr. James J. Peterson; vice president, Dr. Lee W. Roe; secretary, Dr. Willis W. Scales (reelected); treasurer and county physician, Dr. Eugene Thames, and county health officer, Dr. Paul J. M. Acker (reelected), all of Mobile.

Truce in Medical Society.—The Jefferson County Medical Society, at its meeting, February 5, adopted resolutions affirming its confidence in the committee of health of the society, and agreeing that there should be no further discussion in the society about existing public health matters until the supreme court has handed down its decision on the question at issue.

Personal.—Dr. John M. Lowrey has been appointed health officer of Birmingham.——Dr. George A. Hogan, Birmingham, has been appointed coroner of Jefferson County, to succeed Dr. Clarence C. Wiley, Birmingham, resigned.——Under a ruling of Judge Sharp, February 24, Dr. Cecil Gaston, who had been appointed by the city commissioner as health officer, was ousted, the ruling being that the health officer must be appointed by the county board of health.——Dr. Samuel W. Welch, Talladega, has succeeded Dr. William H. Sanders, Montgomery, as state health officer.

CALIFORNIA

Physicians' Building Remodeled.—Plans are being made for remodeling the Physicians' Building, Sacramento, at a cost of from $75,000 to $100,000.

Personal.—Dr. Rose C. McFall, Los Angeles, formerly of Chicago, was seriously injured by being run down by an automobile, February 24.

"Healer" Dies.—August Schroeder, self-styled "divine healer," whose trial for fraudulent use of the mails was interrupted by his illness, died, February 28, at the Los Angeles County Hospital, from pneumonia.

ILLINOIS

Appropriations for Medical School.—A bill introduced into the house by Representative William H. H. Miller, Champaign, and in the senate by Hon. Henry N. Dunlap, proposes expenditures for the medical department of the University of Illinois amounting to $2,000,000 during the next decade.

Typhoid Reported.—Dr. Edward S. Godfrey of the state board of health is said to have discovered that North Chicago sewage is emptied into Lake Michigan within 2,400 feet of the intake pipe supplying water to the town, in which twenty cases of typhoid fever were reported earlier in the week.——March 9, thirteen cases of typhoid fever were reported in Waukegan.

Clinic on Infantile Paralysis.—March 24, Dr. Clarence W. East will give a clinic on infantile paralysis in Kankakee. In the morning and afternoon he will examine patients convalescing from the disease, and in the evening he will give an illustrated talk in the assembly hall of the high school on "Infantile Paralysis." The work is being undertaken with the cooperation of the Kankakee County Medical Society.

Personal.—Dr. C. St. Clair Drake, Springfield, secretary of the state board of health, was one of the speakers at the ninth annual meeting of the American Water Works Association at Urbana, March 13. March 14, Dr. Drake spoke before the Chicago Women's Club on "Midwifery and Infant Blindness."——Dr. Albert R. DeCosta, Bloomington, has been appointed physician to McLane County.——Dr. Eugene Waul, Jr., Edwardsville, was slightly injured when the gasoline tank of his automobile exploded, March 5.

Chicago

Infant Welfare.—The Infant Welfare Society is endeavoring to raise $100,000 for fifty new infant welfare stations. Drs. Sadie Bay Adair and Walter H. Hoffman have charge of the movement.

Bond Issue for Contagious Disease Hospital.—An active campaign is being made to obtain a bond issue aggregating $2,200,000 for health purposes, of which $1,000,000 is for incinerators and other equipment for the disposal of wastes, and $750,000 for the erection of two additional wings at the Contagious Disease Hospital.

Army Lectures to Be Given.—Major William N. Bispham, M. C., U. S. Army, delivered the first lecture in a course on military hygiene and sanitation at Northwestern University Medical School, March 19, at Rush Medical College, March 23, and at Loyola University, March 24. Two lectures each week are to be delivered at each of the medical schools of the city.

Eight-Hour Day for Nurses Impracticable.—The council of the Chicago Medical Society on March 13 adopted a resolution stating that a shift for nurses to eight hours "would be to disrupt the efficiency of their work," and stating furthermore that nursing should not be governed by union labor regulations but "is a special business and cannot be dictated to by laws other than those giving them the right to act as nurses."

Blame for Typhoid Fixed.—The commission appointed by the city council health committee to ascertain whether the typhoid fever epidemic following the storm of January, 1916, was due to inefficiency of the pumping station of the sanitary district has reported that both the city government and the sanitary district are at fault, on account of inadequate equipment. Immediate repairs to the pumping station of the sanitary district, the overhauling of the Thirty-Ninth Street plant and an auxiliary gravity sewerage system are recommended. The commission further urges that passenger steamers should not be permitted to dump refuse in the lake.

KANSAS

Personal.—Drs. George R. Dean, McPherson, and Henry A. Dykes, Lebanon, have been appointed members of the State Board of Registration and Examination.

LOUISIANA

Physicians Organized.—At a meeting held at Lake Charles, February 12, the Seventh District Medical Association was organized. Dr. Thomas H. Watkins was elected president and Dr. George G. Kreeger, secretary-treasurer, both of Lake Charles.

Health Survey of New Orleans.—To determine the number of cases of illness in the city within a given time and the nature of the care of those who are ill, the Metropolitan Life Insurance Company has offered to make a health survey of New Orleans, at the expense of the company, and with the cooperation of the city board of health. The survey began March 16, when the subject of malaria was taken up.

MARYLAND

Building for Doctors.—A medical building will be erected in the near future at Saratoga and Charles Streets. It will be ten stories high, the upper floors exclusively for physicians

and dentists, with special equipment and fittings for physicians' offices.

Meetings.—A joint meeting of the Baltimore City Medical Society with the Medical Society of the District of Columbia was held in Osler Hall, Baltimore, March 16, when the subject of medical preparedness was discussed. The principal speakers were: Surg.-Gen. William C. Gorgas, U. S. Army, whose subject was "Modern Methods of Army Sanitation"; Col. Louis A. LaGarde, M. C., U. S. Army (retired), who spoke on "The Surgeon and Medico-Military Preparedness," and Major Robert E. Noble, M. C., U. S. Army, the title of whose paper was "The Medical Needs of the Service."

Personal.—Major J. Harry Ullrich, commander of Field Hospital No. 1, N. G. Md., has been named as president of a board of medical examiners for the Maryland Naval Militia by Secretary Daniels. This board will be a permanent organization, and is a part of the preparedness program which is being worked out by the federal government. The other members of the board are Passed Assistant Surgeon Flynn and Acting Assistant Surgeon William G. Townsend, U. S. Navy.——Pending the action of the board of managers, Dr. J. J. Roberts has been made acting general superintendent of the Maryland General Hospital, in place of Dr. Elmer Newcomer, deceased.

MASSACHUSETTS

County Sanatorium.—The county commissioners of Plymouth County have decided to establish a tuberculosis hospital for Plymouth County at South Hanson where a site of 33 acres of land is to be purchased. The hospital will cost $75,000.

Amherst Alumni Donate Ambulance.—The alumni of Amherst College have contributed the necessary funds to purchase an ambulance, which has already started for France and will be used in the French service. It is expected that an Amherst graduate will be secured for driver of the ambulance.

Personal.—Dr. Philip W. Place of the Boston City Hospital has been appointed resident physician at the Contagious Group of the Cincinnati General Hospital.——Dr. Howard W. Beal, Worcester, who was on duty for several months in the early part of the European War at the American Women's Hospital, at Paignton, North Devon, England, has declined an offer to take charge of the American Ambulance Hospital at Juilly, France.

Cutter Lectures.—Dr. Martin H. Fischer, professor of physiology in the University of Cincinnati, and Dr. Ludvig Hektoen, head of the department of pathology of the University of Chicago, have been elected Cutter lecturers on medicine and hygiene at Harvard University for the academic year of 1916-1917. Dr. Fischer lectured on "The General Physiology and Pathology of Water Absorption by Protoplasm," March 20, and on "Fats and Fatty Degenerations," March 21.

Harvard Medical Honors.—The annual meeting for the awarding of medical honors at Harvard Medical School was held in the Administration Building, February 26. President Lowell presided. The principal address was delivered by Prof. William S. Thayer of Johns Hopkins Medical School and Dean Bradford presented diplomas to the John Harvard Fellows and other scholars of the first group, and elections to the Alpha Omega Alpha Society were announced.

The Study of Ptomain Poisoning.—The National Canners' Association, March 12, offered $20,000 annually for three years to be used in the investigation of food poisoning. This appropriation has been accepted by Harvard University and researches into the subject of ptomain poisoning with a special reference to canned goods will be made by the Harvard Medical School under the direction of Dr. Milton J. Rosenau, Boston.

Surgical Unit Sails for Europe.—A Harvard surgical unit headed by Dr. Hugh Cabot sailed for Europe on the *Andenia*, February 21, for a British base hospital in France. The medical personnel includes: Drs. Thomas J. Blackshear, Jr., Dublin, Ga.; E. Stanley Bridges, St. John, N. B.; Eldon D. Busby, Ottawa, Ont.; P. Pineo Chase, Hyannis, Mass.; Ernest G. Crabtree, Brookline, Mass.; Thomas D. Cunningham, Brookline, Mass.; Ezra S. Fish, New York; Francis B. Grinnell, Charles River Village, Mass.; Jefferson W. Hawthorne, North Cambridge, Mass.; Don J. Knowlton, Greenwich, Conn.; Fabyan Packard, Allston, Mass.; Albert O. Raymond, Brockton, Mass.; George C. Shattuck, Boston; Oliver H. Stansfield, Worcester, Mass.; William P. Sweeny, New York; Leonard M. Van Stone, Brookline, Mass.; George Watt, East Providence, R. I., and the Worcester City Hospital; Edward S. Welles, Boston; Dr. David E. Wheeler, New York; Harry W. Woodward, Boston, and John S. Young, St. Louis.

NEBRASKA

The Vaccination Question.—The Douglas County Medical Society, March 13, unanimously adopted a resolution upholding the vaccination policy of Health Commissioner Ralph W. Connell.

Hospital Wing to Be Built.—A contract has been awarded for the building of the northeast wing of the Methodist Hospital, Omaha, which will be four stories in height and 40 by 90 feet.

Board of Secretaries to Be Done Away With.—A bill introduced by Senator Fox, reorganizing the state board of health on a broader basis, and doing away with the present board of secretaries except in a strictly advisory capacity, passed the senate, March 6, by unanimous vote.

NEW YORK

Health Clinic Opened.—A health clinic conducted by Miss Pearl N. Hyer, public health nurse of Little Falls, was opened in that city, March 8. Dr. Augustus P. Santry was in charge of the clinic.

Personal.—Dr. John L. Heffron, dean of the Syracuse College of Medicine, who went to Florida on account of his health several weeks ago, is reported to be greatly improved and expects to return to Syracuse next month.

Men Available for Military Service.—Acting Commissioner of Health Dr. Linsly R. Williams, New York, in response to inquiry for Adjutant-General Stotesbury, states that there are about 570,000 men fit for active military service in New York, and about an equal number fit for home defense service. These figures are based on the estimated population of New York for 1917 as being 10,490,680.

Oppose State Institutions in Watershed.—The Merchants' Association has protested before the Senate Finance Committee against retaining the Mohansic State Hospital and the Training School for Boys within the Croton watershed. The Wagner-Bloch bill provides that no state institution shall hereafter be located within the watershed and that the hospital and training school projects be abandoned.——A bill creating an emergency police force to guard the Croton and Ashokan watersheds was signed by Governor Whitman, March 16. The new force will relieve the National Guard contingents at present patrolling the water supply property of New York in counties not within the city.

Health Insurance Commission to Be Appointed.—A bill introduced into the legislature, March 12, provides for a commission to investigate health insurance, the inquiry to cover sickness and accidents of employees and their families not reached by workmen's compensation; the causes; the loss to individuals and to the public; the adequacy of present treatment and of benefits provided through commercial insurance, fraternal orders, etc.; occupational disease, and existing methods of prevention. The commission is to consist of two senators appointed by the president of the senate, three assemblymen appointed by the speaker, and four other persons not legislators appointed by the governor, one of the number to be a representative of wage earners, one of employers, one a physician, one a lawyer, one an economist, and one a woman.

New York City

Class Reunion.—The class of 1892 of the Medical Department of the University of the City of New York will hold its twenty-fifth reunion and banquet at the Hotel McAlpin on the evening of April 11. The committee in charge includes Drs. John F. Hagerty, Newark, N. J.; J. Emmet Tower, Manhattan, and Robert E. Coughlin, Brooklyn.

Unwholesome Food Condemned and Destroyed.—During the week ending March 10, inspectors of the terminal squad of the Bureau of Food and Drugs condemned 314,258 pounds of assorted foodstuffs, consisting of poultry and large quantities of fruits and vegetables. Members of the warehouse squad of inspectors during the same week condemned 18,318 pounds of foodstuffs. Inspectors of the factory squad condemned 14,400 pounds of cocoa damaged by fire.

American Posture League.—March 10 this organization held a meeting at the home of Mrs. James Speyer for the purpose of presenting constructive work in public, personal, school

and industrial hygiene which has been developed by the American Posture League. The audience consisted of an invited company, including officials of local medical societies, representatives of state and city boards of health and education, and others especially interested in welfare and efficiency work. Among the speakers were Drs. Henry Ling Taylor, Linnaeus E. LaFetra, Eliza M. Mosher, James Porter Fiske and Stuart H. Rowe, Ph.D.

New Hospital Buildings.—Beth Israel Hospital has recently acquired title to property at 17 Livingston Place, next to a frontage of 150 feet, which it already owned. The trustees announce that a new hospital will be erected on this site at a cost of $1,000,000.——The Bronx Hospital on Crotona Park has filed plans with the building department for a new three-story building which will be begun immediately.——St. Vincent's Hospital has secured control of the entire block on the east side of Seventh Avenue, between Eleventh and Twelfth streets. The main hospital was built around four small houses on Seventh Avenue, all of which have now been acquired.

Free Course in Contagious Diseases.—The department of health announces that its courses in contagious diseases given during the past two years have been so successful that a similar series of lessons will be given this spring. Each course consists of eight lessons, six on clinical bedside instruction and two on laboratory work. Only practicing physicians will be admitted. No fees will be charged, but physicians entering the course are expected to attend regularly. The courses will be given on Tuesdays, Wednesdays, Thursdays and Fridays, at 2 p. m., at the Willard Parker Hospital. The first lecture will be given on March 27 by Dr. Henry W. Berg. Physicians desiring to attend the course may register with the Bureau of Public Health Education, Department of Health, 139 Centre Street.

NORTH CAROLINA

Personal.—Dr. Daniel E. Sevier, Asheville, has been reelected health officer for Buncombe County.——Dr. James A. Speight, Nashville, has succeeded Dr. James C. Braswell as full time health officer of Nash County.

Hospital for Negroes.—A 4-acre lot has been provided and plans are being made for the erection of a greater Lincoln Hospital at Durham for the exclusive use of negroes. Dr. Aaron M. Moore, a well known colored physician of Durham, has associated with him a number of leading citizens of both races, which assures the success of the plan.

PENNSYLVANIA

Imprisonment for Abusing Hospital Staff.—William Kelley is said to have been sentenced to thirty days' imprisonment in the county jail for abusing a physician and an attendant, at St. Vincent's Hospital, Erie, where he was a charity patient.

Enlarge Sanatorium Accommodations.—The plan of Dr. Samuel G. Dixon, state health commissioner, of building twenty cottages on each side of the present sanatorium building at Hamburg, at a cost of $28,000, was tentatively approved by the House of Appropriations Committee, March 6. This will increase the capacity of the institution to 160.

Postgraduate Work.—The committee on medical education of the state society and the Board of Medical Licensure have advised hospitals to become centers for medical postgraduate work. The Abington Hospital, Old York Road, has begun a monthly series of clinics for the benefit of the Bucks County Medical Society and other local physicians.

Meningitis in Fayette City.—The discovery of six cases of cerebrospinal meningitis in Fayette City between March 2 and 7 has resulted in the taking of precautionary measures by the board of health to prevent the spread of the epidemic. The schools were dismissed for an indefinite period on March 7, and the school buildings have been fumigated. A clean-up campaign has been inaugurated in the borough.

Philadelphia

War Medical Corps Unit.—Twenty-two university medical school graduates have enlisted in a University of Pennsylvania Medical Corps unit under the leadership of Dr. Edward Martin. Fifty nurses, numerous orderlies, attendants, Roentgen-ray men, dietitians and laboratory experts have also added their names to the list. Sufficient equipment is on hand to enable the hospital corps to take the field immediately.

Society Prepares to Combat Poliomyelitis.—In view of a recurrence of infantile paralysis in the coming summer, the Visiting Nurses' Society has sent one of its best nurses to Boston to take a course under Dr. Robert W. Lovett at the Children's Hospital. The expense has been assumed by private means. The course, which covers six weeks, consists of an extensive study of anatomy, muscle training and massage, and it is hoped that the nurses will not only be able to take charge of cases but be able to teach others.

Medical Institutions.—Dr. James M. Anders, a member of the board of trustees of the Medico-Chirurgical Hospital and College, recently announced that its buildings will be abandoned about June 1, so that all structures along the line of the Parkway may be razed by June 15. The college will abandon all its buildings, even the new maternity hospital on Eighteenth Street, that will not fall within the lines of the Parkway. Buildings on the campus of the University of Pennsylvania are now being erected which will contain the three institutions in the merger, viz.: the Polyclinic Hospital, the University of Pennsylvania Medical School and the Medico-Chirurgical Hospital and College.

Personal.—Dr. C. Lincoln Furbush, who went to Berlin several months ago as one of the five medical inspectors requested by England, Roumania and Serbia, to investigate the treatment accorded their captured soldiers in German prisons, returned with Ambassador Gerard's party, March 15. ——Dr. Daniel J. McCarthy delivered a lecture on the "Larger Problems of Social Service in European Countries" at Houston Hall, University of Pennsylvania, March 17.——Dr. Judson Daland will deliver an address on "Focal Infection as a Cause of Constitutional Disease" before the Academy of Medicine, Toronto, April 3.——Dr. Albert F. Schreiber, chief meat and cattle inspector to the bureau of health, is under treatment at St. Mary's Hospital for gangrene of the right foot, which may necessitate its amputation.

TENNESSEE

New Hospital for Memphis.—One hundred and seventy-five thousand dollars has been subscribed for the new Methodist Hospital.

Trachoma Hospital Opened.—A hospital has been opened at Tazewell, under the supervision of the United States Public Health Service, for the treatment of trachoma.

Personal.—Dr. William J. Core, Nashville, surgeon of the Cunard steamer *Folia*, was one of the survivors when that ship was sunk by a submarine off Waterford, Ireland, March 10.——Dr. Joseph L. Mackey, Charleston, was thrown from his automobile recently, and received serious injuries.

State Society Meeting.—The Tennessee State Medical Association will hold its eighty-fifth annual meeting, April 3 to 5, under the presidency of Dr. Charles N. Cowden, Nashville. Prominent features of the program are addresses by Dr. Edgar G. Ballenger, Atlanta, Ga., on "Certain Affections of the Bladder and Syphilis," illustrated by moving pictures; by Dr. James S. McLester, Birmingham, Ala., on "Syphilis and Internal Medicine," and by Dr. Frederick R. Green, Chicago, on "State Regulation of the Practice of Medicine as an Educational Problem."

TEXAS

State Association Meeting.—The annual meeting of the State Medical Association of Texas will be held in Dallas, May 8 to 10. Dr. Samuel E. Milliken is chairman of the general committee of arrangements.

Dinner to Dr. Thompson.—About forty physicians of San Antonio gave a luncheon at the Travis Club, March 8, in honor of Dr. Samuel E. Thompson, who recently resigned his position as director of the State Tuberculosis Sanatorium, Carlsbad, to take charge of the Mountain View Sanatorium, Kerrville.

Personal.—Dr. Thomas B. Bass has been reelected superintendent of the State Epileptic Colony, Abilene.——Dr. John Preston has been reelected superintendent of the State Hospital, Austin.——Dr. John W. Bradfield has been elected superintendent of the State Colony for the Feebleminded, Austin, to fill the vacancy caused by the resignation of Dr. Lewis B. Bibb.

Nostrum Bill Introduced.—February 15, Senator Strickland introduced a bill in the senate which makes it unlawful to sell, offer for sale, give away or dispose of compounds or preparations sold or intended to be used as a specific remedy or treatment for any bodily disease or illness containing more than 2 per cent. of common ethyl or alcohol, except on the written prescription of a licensed physician or when such sale is made by a person having a retail liquor license.

WISCONSIN

Personal.—Dr. James R. Barnett, Jr., Neenah, has been appointed supreme medical examiner of the Equitable Fraternal Union, succeeding his father, the late Dr. James R. Barnett.

Hospital News.—The addition to St. Vincent's Hospital, Green Bay, erected at a cost of $75,000, was opened to receive patients, March 8.——The new St. Joseph's Hospital, Portage, will be ready for occupancy this month.

Medical Reserve Corps Organized.—At a meeting recently held in Milwaukee, the Milwaukee County Division of the Medical Reserve Corps, U. S. Army, was organized and Lieut. George V. I. Brown, Milwaukee, was elected president.

Society Revives.—The Oneida-Forest-Vilas County Medical Society, which has been inactive for about six years, has been reorganized, and elected Dr. William C. Bennett, Rhinelander, as president and Dr. Clarence A. Richards, Rhinelander, secretary.

CANADA

Hospital News.—The finest home for convalescent soldiers in all Canada will be the old Loyola College, Montreal. Here will be centered the headquarters of the Canadian Hospital Commission. The alterations have been completed.——The Canadian Military Hospitals Commission will soon establish another hospital, 4 miles from Montreal, with accommodation for about 600 returned soldiers. It will be situated on 80 acres of ground and will be constructed of huts.

Personal.—The following Canadian physicians have recently been decorated with the military cross: Capts. A. A. Dinant, Frederick W. Lees, Eburne, B. C.; George G. Greer, Peterborough, Ont.; R. M. Luton, J. E. McAskile, William F. Nicholson, Hamilton, Ont.; Paul Poisson, Tecumseh, Ont.; W. D. Rorison and L. R. Meech; Lieuts. William N. Gilmour, Brockville, Ont., and Charles S. Wynne, Toronto, Ont.——Dr. Norman H. Sutton, Peterborough, Ont., is commanding officer in Hill House Military Hospital, Kent County, England.——Captain Tague, Belleville, Ont., has been appointed medical officer of the 235th Battalion.——Capt. J. N. MacRae, Galt, Ont., is now acting adjutant of the Central Military Hospital, Shorncliffe, England.——Col. Samuel W. Prowse, M.D., Winnipeg, is commanding officer of the Princess Patricia Convalescent Hospital recently opened at Shorncliffe, England.——Dr. Charles Sheard, Toronto, has returned from an extended trip through the southern states.——Dr. Giles G. Membery, Adolphustown, Ont., formerly surgeon on H. M. S. *Cochrane*, has received promotion and is now fleet surgeon of the Tenth Cruiser Squadron.——Dr. Ludwig S. MacKid, Calgary, Alta., is now a major in the Canadian Army Medical Corps, on service in France.——Militia orders issued from Ottawa, March 14, announce the appointment of Lieut.-Col. George A. S. Ryerson, Toronto, to be honorary surgeon-general, succeeding to the title held by the late Hon. Sir Frederick W. Borden, M.D.——Col. Perry G. Goldsmith, Toronto, has been appointed president of the Officer's Standing Medical Board in England.——Col. George S. Rennie, Hamilton, Ont., has assumed the entire duties of assistant medical director at Shorncliffe.——Major Donald, Vancouver, B. C., has been appointed commandant of the Canadian hospital ship, with Captain McDiarmid as adjutant.——Lieut.-Col. Frank W. E. Wilson, Niagara Falls, Ont., and Lieut.-Col. D. W. McPherson, Toronto, both of whom have been in England for many months, have now gone to France.

GENERAL

Army Notes.—Major Jesse R. Harris, Tacoma Park, D. C., M. C., U. S. Army, was retired from active service, March 2, on account of disability incident to the service.

Health Week for Negroes.—The National Negro Business League has set apart the week of April 22 to 28 as the National Negro Health Week, and has agreed to cooperate with the National Clean-up and Paint-up Campaign Bureau in an endeavor to better the living conditions of negroes throughout the United States.

What the Rockefeller Foundation is Doing.—Dr. George E. Vincent, president-elect of the Rockefeller Foundation, in an address before the Industrial Club of Chicago recently, stated that the Rockefeller Institute for Medical Research had a plant valued at $15,000,000 and has as its object the intensive study of diseases. On the conclusion of the war, the foundation will establish schools and hospitals in China to cost at least $1,000,000.

New Tuberculosis Journal.—The National Association for the Study and Prevention of Tuberculosis announces the appearance of the *American Review of Tuberculosis*, a monthly technical journal. Dr. Allen K. Krause, Baltimore, is managing editor, and the editorial policy is determined by a staff of seven physicians consisting of Dr. Edward R. Baldwin, Saranac Lake, N. Y., editor-in-chief, and Drs. Lawrason Brown, Saranac Lake, N. Y., Henry R. M. Landis, and Paul A. Lewis, Philadelphia, Milton J. Rosenau, Boston, Henry Sewall, Denver, and Borden S. Veeder, St. Louis.

Grayson's Appointment Confirmed.—The nomination of P. A. Surg. Cary T. Grayson to be medical director with the rank of rear admiral has been confirmed by the senate. This gives Dr. Grayson the highest rank in the Medical Corps of the Navy, a rank at present held by only one other officer, Surg.-Gen. William C. Braisted. Dr. Grayson was born in Virginia, Oct. 11, 1878, and received his medical education at the University of the South, Sewanee, Tenn., from which he was graduated in 1903. He immediately entered the navy as acting assistant surgeon, receiving his grade of assistant surgeon, June 28, 1904. He was promoted to passed assistant surgeon three years later, and, at the time of his advancement to rear admiral, had had a little more than three years' sea service and seven years' shore or other duty. He was on duty as personal physician to President Taft, and since President Wilson's accession has continued in the same position to President Wilson. This promotion carries with it a corresponding increase of pay. The pay of passed assistant surgeon is $2,200 at sea, or $2,000 on shore duty; that of rear admiral $8,000.

Occupational Therapy.—At the conference held at Clifton Springs, N. Y., March 15-17, addresses were made by Dr. W. R. Dunton, Jr., of the Sheppard and Enoch Pratt Hospital on the "History of Occupational Therapy"; by Mr. George E. Barton on the "Therapeutic Value of Drawing and Modeling, and Preparation of Patients for Inoculation of 'Bacillus of Work'"; by Mr. Kidner on the "Difficulties and Results of Reeducation of the Crippled Soldier in Canada"; by Mrs. Slagle on the "Work of the Occupational Experiment Station in Chicago"; by Miss Johnson on the "Occupational Work on Blackwell's Island," and by F. B. and L. M. Gilbreth on a "New Occupation for the Crippled Soldier—The Conservation of the World's Teeth," illustrated by photographs of a one-eyed, one-armed, partially deaf, legless man engaged in dental nursing. The conference resulted in the formation of a National Society for the Promotion of Occupational Therapy, with the following officers: president and chairman of committee on research and efficiency, George Edward Barton, Clifton Springs, N. Y.; vice president and chairman of committee on installations and advice, Mrs. Eleanor Clarke Slagle, Chicago; secretary, Miss Isabel G. Newton, Consolation House, Clifton Springs, N. Y., and treasurer and chairman of committee on finance, publicity and publications, Dr. W. R. Dunton, Jr., Towson, Md.

FOREIGN

International Convalescents Interned at Lago di Garda.—Arrangements are now under way to have the health resorts on the Lago di Garda, Italy, utilized for the convalescent wounded from the entente allied nations.

The Tripier Legacies.—Prof. R. Tripier, formerly of the University of Lyons, has bequeathed to the university the sum of $40,000, the income of which is to be used to encourage works on operative medicine and pathologic anatomy. He also left a similar sum to the city of Lyons for the purchase every fifth year of some work of art.

Financial Aid for Parturients.—A recent French decree grants a daily allowance to women of French nationality during the period just preceding and following a childbirth, regardless of whether the woman is a habitual wage-earner or not. The same allowance is also made to refugees from the invaded regions, under the same conditions. The amount of the allowance is that of the rent paid.

Deaths in the Profession Abroad.—**J. Lefour,** professor of obstetrics at the University of Bordeaux, aged 66.——**E. Huet,** chief of the service of electrotherapy at the Salpêtrière, Paris, during and since Charcot's day, president of the Société de Neurologie.——**G. Paladino,** professor of histology and general physiology at the University of Naples, senator of the realm, president of various scientific societies and member of numerous others in various countries, aged 75. His obituary notice in the *Riforma Medica* mentions among the other honors conferred on him that he held an honorary degree from Rush Medical College of Chicago.

The New "Archives Médicales Belges."—The surgeon-general of the Belgian army has taken steps to insure the publication of a medical journal in Belgium, none of the former medical journals having been issued since the invasion of Belgium. The first number has now reached us. It assumes the name of an old Belgian medical journal, the *Archives médicales belges*, so that the new issue appears as No. 1 of Volume 70. The editorial staff includes Depage, Willems and fourteen others. The more active members of the staff are M. Stassen and J. Voncken, who are connected with the Hôpital militaire Cabour, at Adinkerke, in the still uninvaded portion of Belgium. The publishers are J. B. Baillière, 19 rue Hautefeuille, Paris, but the actual work of printing is done at the Institut Militaire Belge de Rééducation Professionelle pour Mutilés de la guerre, at Port-Villez, Vernon, Eure. All the profits of the journal are to be devoted to this institution for the occupational training of crippled soldiers. It is planned to continue the *Archives* monthly, but the editors admit that circumstances may prevent a regular monthly issue, as no one knows what the morrow may bring forth. All exchanges and communications are to be sent to the Comité de Rédaction, Inspection Générale du Service de Santé de l'armée belge en campagne. The first number contains, besides several original articles, an ample abstract department and obituary notices of ten Belgian physicians and ten medical students who have been killed during the war. The Surgeon-General's Catalogue lists three pages of medical or pharmaceutical journals published in Belgium, but only two or three dozen were currently published at the beginning of 1914. This list included the *Gazette médicale de Liége*, the *Presse médicale belge*, the *Journal médical de Bruxelles* besides three international archives for surgery, physiology and pharmacodynamics, and a number of bulletins recording the transactions of various scientific organizations. The *Archives médicales belges* since its foundation seventy years ago has always been the organ of the medical department of the army.

PARIS LETTER

PARIS, Feb. 22, 1917.

The War

PICRIC ACID JAUNDICE AND TRUE ICTERUS

Some authors believe that the jaundice induced by the ingestion of picric acid is characterized by the absence of bile and bile pigments from the urine, while others maintain that picric acid jaundice is a true icterus. Malmejac, in a recent communication to the Réunion médicale de la IV-e Armée, throws new light on this subject. He studied 981 cases of true jaundice and picric acid jaundice, making daily examinations of the urine, and found that bile and bile pigments were always present in large quantities in cases of true icterus, while in cases of picric acid jaundice they were excreted in much smaller quantities and more slowly. Sometimes these elements were found only in traces, but they always gave a distinct reaction. In only five cases was Malmejac able to obtain traces of bile pigment on the first day. He is convinced that there is some relation between the size of the dose of picric acid ingested, the physical condition of the individual and the excretion of pigment. The bile elements appear rather slowly. Is it not possible, then, that if the pigmentation of the skin is not due to the picric acid, the pigment or at least some picric acid derivative would be found in the blood? Malmejac has shown that the skin eliminates these two acids, which would explain the skin pigmentation in the great majority of these cases of picric acid jaundice. Furthermore, picric acid imparts to the urine a currant red color. Malmejac has concluded that, in the beginning, picric acid jaundice and its complications comprise a case of slight intoxication of the hepatic cells. The jaundice provoked by the ingestion of the picric acid is therefore a jaundice of a definite type, which differentiates it from ordinary icterus.

Dr. Boidin stated that various interpretations of Malmejac's findings could be made. Some authors have stated that picric acid jaundice is a false icterus in which the yellow color of the skin and mucous membranes plays no part, so that if one can find biliary pigments in the urine one can eliminate at the start the possibility of a picric acid intoxication. More recently Brulé, Javillier and Backeroot have pronounced picric acid icterus a true icterus; that it is identical with all forms of benign icterus, either infectious or toxic. Like Malmejac, Boidin thinks that all these opinions are too positive, and that the picric acid jaundice is always due to the coloring matter in the acid, on which is often superimposed a true biliary icterus. If one wishes to convince himself of this he need but follow the course of the picric acid in the organism. Ordinarily, picric acid, when ingested, is rejected either by emesis or by diarrhea, which are frequent symptoms at the start. Any portion of the acid that is absorbed must first pass the liver barrier, thereby injuring this organ so that the bile pigments can pass into the blood and urine; but before such an icterus can occur or make its appearance, the picric acid has already been diffused throughout the organism. The fact that it is found in the blood serum and even in the cerebrospinal fluid, as was shown by Malmejac, proves that picric acid possesses extreme diffusibility. It is eliminated by the skin and by the urine, imparting to each a special yellow color. Admitting, then, that the product is diffusible, that it possesses tinctorial qualities, why should it not be capable of coloring the skin and mucous membranes? To the picric acid jaundice may be added a true icterus, but it is secondary and unimportant. Clinically, the nature of this picric acid jaundice has been established, but the chemist must be the sole judge of the matter.

Dr. Merklen stated that the term "picric acid icterus" is incorrect because it implies that the ingestion of picric acid is followed by an essential impregnation of the tissues with bile salts; but no convincing proof has been reported by the authors who claim that the yellow discoloration of the skin is of hepatic origin. One can hardly conceive of an icterus that fails to present all the clinical signs of bile retention: rapid pulse, pruritis, etc. Malmejac, in his convincing communication, throws a new light on the late appearance in the urine of these pigments and biliary acids, the urobilin, etc. At the outset the yellow tint of the skin is unique, being due to the diffusion of the picric products in the serum. Picric acid icterus, reduced to a reality, is a tinctorial phenomenon, but picric acid is a liver poison. Taken in sufficient doses it will in time color the skin and leave its mark on the liver cells. The response of these cells to the agents that come in contact with them, picric acid and others, consists in the production of urobilin, biliary acids, and even a small quantity of pigments; these are the bad consequences, even as albuminuria is the common result of kidney disease. Picric acid intoxication corresponds rather to an acute hepatitis. If the skin discoloration is due to a true hepatitis, the urine must contain the liver products mentioned. In all the cirrhoses the urinary findings are definite, and accompany the icterus. Without doubt, after a time, pigment retention may intervene, although this is difficult to determine, if one must rely only on the yellow tinting of the skin; but it goes to show that the biliary impregnation is merely an episode in the picric acid intoxication.

THE SUGAR CARD AND THE SPAS

M. Peyronnet, senator of the department of the Allier (in which lies Vichy), has directed the attention of M. Herriot, minister of the food supply, to the situation created at the spas and the health resorts by the introduction of the sugar card. The senator pointed out to the minister the interest that would attach to a declaration of the government which would not assure persons frequenting these spas and health resorts of a sufficient amount of sugar, such as they would need during their stay. The minister replied that it was the disposition of the authorities to continue to allow a sufficient amount of sugar to these persons. The sugar will be distributed to the hotels, restaurants and boarding houses on the basis of the consumption during the corresponding month for the two previous years, and for commercial and industrial use, according to the demands of the season. All persons frequenting the spas who are not taking their meals at hotels, restaurants or boarding houses will be given a temporary card for the duration of their stay, whether this be more or less than a month. As for the sick, it has been decided that they shall be given a supplementary quantity of sugar on the presentation of a medical certificate.

FIGHT OF MILITARY AUTHORITIES AGAINST ALCOHOLISM

The commanding general of the armies has interdicted, in the zones determined by the general commander-in-chief, the circulation and sale of alcohol and spirituous liquors. To make this mandate sufficiently effective, penalties were heretofore lacking. Therefore a law has been passed sanctioning the prohibition of the sale and distribution of alcohol as decided on by the military authorities. Infractions of the law are punishable the same as in laws made by the administrative authorities. The same penalties will apply, in case of

infraction, to the arrangements made to prevent the giving of alcohol and spirituous liquors to the soldiers.

To prevent the danger of alcoholism among foreign-born natives, the military colonial workers on service or passing through the Marseilles region (Senegals, Arabs, Kabyles, Indo-Chinese, etc.), the commanding general of that region has decided that the sale of wine, and in general of all alcoholics, even those of a test less than 23 degrees, was interdicted for men coming under these categories. A very active surveillance will be exercised over the retailers of alcoholics. In cases of infraction they will not be allowed to admit troopers and colonial workers.

Compulsory Notification of Acute Anterior Poliomyelitis

By a recent decree, acute anterior poliomyelitis has been added to the list of transmissible diseases for which notification and disinfection are compulsory. This list includes at present: (1) typhoid, (2) typhus, (3) variola and varioloid, (4) scarlet fever, (5) measles, (6) diphtheria, (7) military fever, (8) cholera and choleriform diseases, (9) ague, (10) yellow fever, (11) dysentery, (12) puerperal infection and ophthalmia of the new-born (unless the confinement is not made public), (13) epidemic cerebrospinal meningitis, and (14) acute anterior poliomyelitis. The same decree modifies the method of designation of maladies of which notification may be made by the substitution of letters for the numbers heretofore given them. These maladies are (A) pulmonary tuberculosis, (B) whooping cough, (C) grip, (D) pneumonia and bronchopneumonia, (E) erysipelas, (F) mumps, (G) leprosy, (H) favus, and (I) purulent conjunctivitis and trachoma.

Books for the Blind

The city of Paris is informing the public, by means of posters, that the Valentin Haüy Association for the Welfare of the Blind has deposited in six municipal libraries a circulating library composed of several books printed in Braille type, to be placed at the disposition of the blind readers of the department of the Seine. Blind readers will be allowed to take these books home under the same conditions and regulations as apply to the ordinary books in municipal libraries. These special books will be renewed periodically by the Valentin Haüy Association.

BERLIN LETTER

(Received, March 12, 1917)

Berlin, Jan. 5, 1917.

Personal

Professor von Grützner has resigned as director of the Physiologic Institute because of advanced age.

Professor Ibrahim of Munich has accepted the chair of pediatrics at Jena.

Privy Councilor Professor Schüle, director of the Illenau (Baden) Institute, died at the age of 76. In 1873 he was given an honorary degree of the Freiburg University. He also was an honorary member of many psychiatric societies in this and foreign countries. Since 1877 he was associate editor of the *Allgemeine Zeitschrift für Psychiatrie.*

December 11, Privy Councilor Leser, the editor of a well known textbook on special surgery, died at Frankfort-on-the-Main. He was a pupil of von Volkmann.

Privy Councilor Pelman, director of the Psychiatric Clinic in Bonn, died, December 31, aged 79 years.

On the same day Professor von Zehender, formerly ordinary professor of ophthalmology in the Rostock University, died at the age of 97.

December 29, B. S. Schultze of Jena celebrated his eighty-ninth birthday.

December 31, Privatdozent Prof. A. Pappenheim of Berlin died of typhus. He was 46 years of age. He received distinction because of his work in hematology. His contribution to "the cells in leukemic myelosis," of which the studies of normal and pathologic blood cells are a part, deserves special mention. He was the founder and editor of the *Folia haematologica.*

Congress of Internal Medicine

The German Congress of Internal Medicine will be held in April, 1917, under the chairmanship of Professor Minkowski. The most important subjects for discussion will be: 1. Nutrition during the war, by M. Rubner (Berlin) and F. von Müller (Munich). 2. Constitutional diseases, by F. Kraus (Berlin) and A. Steyrer (Innsbruck). 3. The rare infectious diseases of the war. War experiences in the field of internal medicine will also be discussed.

The Number of Medical Graduates

During the scholastic year 1914-1915, 1,038 candidates for the medical degree received professional approbation (1913-1914, 3,822). There were seventy-two (1913-1914, 148) women. The graduate degree in dentistry was conferred on fifty men (1913-1914, 195) and twelve women (1913-1914, ten). The number of women medical students is continually increasing. During the winter semester 1908-1909 there were 334; in 1915-1916, 1,229, almost a fourfold increase. The number of women students in all the German colleges was much greater than this; in 1908-1909, there were 1,077; in 1915-1916, there were 4,796, almost a fivefold increase. The diminution in the number of medical graduates and licentiates was caused by the war. This was to be expected. In 1912-1913 the official sanction was given to 1,447, and in 1913-1914 there were 3,822 licentiates.

Work of the Central Committee of the German Red Cross.

During the first two years of the war the central committee of all the German Red Cross organizations disposed of 80,000,000 marks ($20,000,000). This does not include the funds handled by the societies of the individual German states, nor the women's societies, nor the central committee of the Prussian State Society. Thirteen and one-half million marks ($3,375,000) were spent for nursing alone, the money having been contributed in various ways. The sale of the so-called *Kaiserin-Kriegsfürsorge* (Empress first-aid) welfare card and several other picture cards realized 750,000 marks ($187,500). The so-called *Kreuz-Pfennig-Marken* (Red Cross stamps) realized 470,000 marks ($117,500). To these sums must be added the collections made for prisoners of war, furnishing of mineral water and food supplies for the injured, for Red Cross work in Turkey, etc., an additional 7,750,000 marks ($1,937,500). Five hospital trains were organized (costing nearly 1,000,000 marks [$250,000]); for the care of prisoners of war 713,000 marks ($178,250) were spent, and for gifts 4,500,000 marks ($1,125,000). More than 1,000,000 marks ($250,000) were spent to furnish mineral water for the troops in the field and for the base hospitals. A total of 17,000,000 marks ($4,250,000) was spent for war nursing during the first two years of the war. Ten million marks ($2,500,000) were collected, and 9,000,000 marks ($2,250,000) of this sum were spent in welfare work, such as aiding and contributing to the support of the war widows and war orphans, of the exiles and of other persons suffering from the war. The central committee distributed books, newspapers, etc., amounting to 7,500,000 marks ($1,875,000). The central committee of the Prussian State Society disposed of 30,000,000 marks ($7,500,000) during the first two years of the war. About 11,500,000 marks ($2,875,000) were spent for nursing (including ten hospital trains, costing 1,500,000 marks [$375,000] each, the equipment of the volunteer nurses 7,500,000 marks [$1,875,000]), and for war welfare work the committee collected 3,250,000 marks ($812,500), of which one half was spent.

Typhus in Poland

Shortly after the occupation of Russian Poland by the German troops, the commander-in-chief ordered the notification of all infectious and contagious diseases. This was done for the express purpose of combating typhus and smallpox. The result has been entirely satisfactory. During the last three months of 1915 there were 704 cases of typhus in Warsaw and thirty-two deaths from this disease. During the first three months of 1916 there were 5,256 cases and 428 deaths; during the second three months there were 6,294 cases and 507 deaths. During the third three months the number of cases fell to 2,309, with only 140 deaths. The incidence and mortality of smallpox was as follows: last three months of 1915, 955 cases and 157 deaths; first three months of 1916, 1,029 cases and 144 deaths; second three months of 1916, 918 cases and 130 deaths; third three months, 195 cases and twenty-three deaths. No case of cholera has been reported in the Warsaw district since October, 1915.

Hospital for Research in Psychiatry

A considerable number of founders, mostly members of the Kaiser Wilhelm Society, have united to erect an institution for research in psychiatry, acting on the suggestion of the German Psychiatric Society. At present the funds collected are not sufficient to finance an independent research institution, but the movement has furnished sufficient stimulus to insure the erection of a state institution in connection with the psychiatric clinic in Munich after the war is over.

Marriages

MALCOLM D. B. KINSELLA, M.D., North Bay, Ont., to Miss Jean Young of New Zealand, in London, England, recently.

HOMER HOLLETT OAKSFORD, M.D., Gloversville, N. Y., to Miss Sarah Elizabeth Swinyer of Utica, N. Y., January 25.

CORNELIUS C. KEPLER, M.D., to Miss Florence Howard, both of Jolley, Iowa, at Pocahontas Center, Iowa, January 24.

DEAN HENRY JEFFERS, M.D., to Miss Lucretia Van Zandt, both of West Salem, Wis., recently.

JOHN MILLER BREEN, M.D., to WILHELMIA AFTON RAGLAND, M.D., both of New York, March 8.

FRANCIS P. NORTON, M.D., to Miss Gertrude Carpenter, both of Minto, N. D., February 20.

BENJAMIN B. GRIFFITH, M.D., to Mrs. Flora K. Moore, both of Vincennes, Ind., March 6.

ELMER S. BOLTON, M.D., to Miss Mary Salmen, both of Cleveland, January 4.

Deaths

Raleigh R. White, M.D., Temple, Texas; Tulane University, New Orleans, 1893; a Fellow of the American Medical Association; formerly president of the Central (Twelfth) District Medical Association; chief surgeon of the Gulf, Colorado and Santa Fe Division of the Santa Fe System; local surgeon of the Missouri, Kansas and Texas Railroad; one of the organizers of the Kings Daughters Hospital and Temple Sanitarium, Temple; a director of the City National Bank; died at his home, March 2, from angina pectoris.

Henry Leber Coit, M.D., Newark, N. J.; College of Physicians and Surgeons in the City of New York, 1883; aged 62; a Fellow of the American Medical Association and of the New York Academy of Medicine; a widely known specialist on diseases of children; organizer of the first medical milk commission in the United States; first president of the American Association of Medical Milk Commissions, and president of the International Society of Gouttes de Lait, Budapest; died at his home, March 13.

Eliot Gordon, M.D., Summit, N. J.; Long Island College Hospital, Brooklyn, 1888; aged 53; formerly a Fellow of the American Medical Association; a member of the Medical Society of New Jersey and American Medico-Psychological Association; resident physician at the Fair Oaks Sanatorium, Summit; for fourteen years a member of the staff of the New Jersey State Hospital, Morris Plains; died at his home, March 3, from pneumonia.

William M. Kaull, M.D., Sawtelle, Calif.; New York University, New York, 1855; aged 83; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; for many years a practitioner of Princeton, Ill.; assistant surgeon of the Seventy-Second Ohio Volunteer Infantry and surgeon of the Fortieth U. S. Infantry throughout the Civil War; died at his home, about March 1.

Samuel Mason McCollin, M.D., Philadelphia; Jefferson Medical College, 1878; aged 73; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania, American Roentgen-Ray Society and American Electro-Therapeutic Association; radiographer to the Philadelphia Orthopedic Hospital; died at his home in Llanerch, Pa., February 24.

Joe Vincent Meigs, Jr., M.D., Lowell, Mass.; Jefferson Medical College, 1889; aged 49; a Fellow of the American Medical Association; surgeon to St. John's, Lowell, and Lowell General hospitals; consulting surgeon to the State Infirmary, Tewkesbury; for eight years medical examiner of the Fifth Middlesex District; died in the Yorick Club, Lowell, March 9, from cerebral hemorrhage.

Charles Lambert Thomas, M.D., Crawfordsville, Ind.; Miami Medical College, Cincinnati, 1858; aged 84; surgeon of the Twenty-Fifth Indiana Volunteer Infantry during the Civil War; a member of the Montgomery County Bar; for two years a member of the city council of Crawfordsville and for several years a member of the board of education; died at his home, March 4.

James Aloysius Joseph O'Brien, M.D., New York; Queens University, Dublin, Ireland, 1867; aged 70; who entered the Medical Corps of the British Army in 1868; served during the Ashantee War in West Africa in 1873 and 1874, and was decorated for valor and was retired with the rank of surgeon-major in 1880; physician to the Ludlow Street Jail; died at his home, March 1.

Oscar F. Potter, M.D., St. Louis; Washington University, St. Louis, 1866; aged 87; for many years dean and professor of materia medica and medical botany in the St. Louis College of Pharmacy; editor of the *St. Louis Medical and Surgical Journal;* confidential agent of the United States government during the Civil War; died at his home, February 28, from pneumonia.

James W. Rousseau, M.D., Modesto, Calif.; University of Tennessee, Nashville, 1893; aged 56; formerly local surgeon for the Cincinnati, New Orleans and Texas Railroad at Greenville, Texas, and later surgeon to the Kentucky and Tennesee Railway at Stearnes, Ky.; a member of the school board of Modesto since 1908; died at his home, March 1, from heart disease.

William Henry Silbaugh, M.D., Chillicothe, Ohio; Miami Medical College, Cincinnati, 1895; aged 49; a member of the Ohio State Medical Association; secretary of the Ross County Medical Society; was accidentally killed at his home, March 1, by the discharge of a shotgun which he was placing in his automobile preparatory to a trip to his farm.

Edward Dyer Peters, M.D., Dorchester, Boston; Harvard Medical School, 1877; aged 67; who practiced medicine for a time and afterward specialized in mining engineering; territorial assayer of Colorado in 1872; lecturer and professor of metallurgy in Harvard University since 1904; an authority on copper smelting; died at his home, February 17.

Carl Gehr Parsons, M.D., Denver; Denver and Gross College of Medicine, Denver, 1904; aged 39; formerly a Fellow of the American Medical Association; a member of the American Association of Anesthetists; a specialist in anesthesia and anesthetist to the Denver City and County Hospital for twelve years; died at his home, March 5.

John Sample Long, M.D., Joplin, Mo.; New York University, New York, 1892; aged 61; formerly president of the Jasper County (Mo.) Association of Physicians and Surgeons; lecturer at St. John's Hospital and local surgeon of the Frisco System at Joplin; also a druggist; died in a sanatorium in Boston, March 3, from rheumatism.

Orson Millard, M.D., Flint, Mich.; University of Michigan, Ann Arbor, 1870; aged 71; formerly physician to the State School for the Blind; supreme medical examiner of the Loyal Guard, and formerly president of the Medical Section of the National Fraternal Congress; died in Oak Grove Hospital, Flint, February 26, from nephritis.

Eugene G. Matson, M.D., Pittsburgh; University of Pennsylvania, Philadelphia, 1883; aged 58; a Fellow of the American Medical Association; a specialist in bacteriology; for twenty years bacteriologist in charge of the City of Pittsburgh Laboratory; died in the West Penn Hospital, Pittsburgh, March 10.

Mahlon R. Pritchard, M.D., Westfield, Pa.; College of Physicians and Surgeons, Baltimore, 1880; aged 64; a Fellow of the American Medical Association and formerly president of the Tioga County (Pa.) Medical Society; a specialist on diseases of the eye, ear, nose and throat; died at his home, February 23.

Frank Edward Gessner, M.D., Port Jervis, N. Y.; University and Bellevue Hospital Medical College, New York, 1903; aged 35; a Fellow of the American Medical Association; for four years health officer of Port Jervis; died at the Interpines, Goshen, N. Y., March 6, following a nervous breakdown.

Frederick P. Minton, M.D., Millbury, Ohio; University of Louisville, Ky., 1893; aged 63; a member of the Ohio State Medical Association; who was injured in a collision between his automobile and a New York Central train, in August last, and never regained consciousness; died at his home, March 8.

William Samuel Cherry, M.D., New York; College of Physicians and Surgeons in the City of New York, 1899; aged 44; formerly house surgeon to St. Vincent's Hospital, and major of the Ninth Coast Artillery; died suddenly at the home of his father in Larchmont, N. Y., February 28.

John W. Fooks, M.D., Laurel, Del.; Jefferson Medical College, 1874; aged 64; also a druggist; a member of the state senate in 1910; appointed inspector under the Harrison Narcotic Law in 1915; died at his home, February 22, from acute nephritis, following ptomain poisoning.

William Waugh McCleary, M.D., Bellevue, Pa.; College of Physicians and Surgeons, Baltimore, 1884; aged 56; a member of the Medical Society of the State of Pennsylvania; surgeon to the Suburban General Hospital, Bellevue; died in the Presbyterian Hospital, Pittsburgh, March 5.

William Russell Stephens, M.D., DeLand, Fla.; Marion-Sims College of Medicine, St. Louis, 1892; Barnes Medical College, St. Louis, 1893; aged 46; a member of the Florida Medical Association and Mississippi Valley Medical Association; died at his home, March 5.

Joseph W. Marsh, M.D., Lewes, Del.; Jefferson Medical College, 1861; aged 77; formerly a member of the Delaware State Medical Society; a director in the Sussex Trust Company, Lewes, and representative in the state legislature in 1913; died at his home, March 9.

Emil August Ballmer, M.D., Columbus Grove, Ohio; Eclectic Medical Institute, Cincinnati, 1898; aged 58; a member of the Ohio State Medical Association; died at his home, Dec. 20, 1916, from fatty embolism of the coronary artery due to an injury five weeks before.

Florence Louisa Evans, M.D., East St. Louis, Ill.; Barnes Medical College, St. Louis, 1906; aged 41; a Fellow of the American Medical Association; a specialist in clinical pathology and bacteriology; died in Corpus Christi, Texas, March 7, from erysipelas.

John Williams Dunn, M.D., Turnersville, Tenn.; Vanderbilt University, Nashville, Tenn., 1880; aged 60; who had been prominently identified with the Planters Protective Association since its organization; died at his home, March 6, from heart disease.

Simon Harry Greene, Jr., M.D., New York; University of Pennsylvania, Philadelphia, 1901; aged 38; assistant in surgery in the Dispensary of the Presbyterian Hospital, New York; died at his home, March 1, from pneumonia.

Oscar B. Campbell, M.D., Cleveland; Western Reserve University, Cleveland, 1883; aged 69; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; died at his home, March 2.

Edmond H. Ames, M.D., Antioch, Ill.; Detroit Homeopathic Medical College, 1874; aged 70; a veteran of the Civil War; formerly a member of the Illinois State Medical Society; died at his home, March 7, from cerebral hemorrhage.

Edward Sutton Chambers, M.D., Annona, Texas; Kentucky School of Medicine, Louisville, 1901; aged 41; formerly a member of the State Medical Association of Texas; died at his home, February 14, from pneumonia.

Sidney O. Smith, M.D., Ellisville, Miss.; Tulane University, New Orleans, 1882; aged 55; formerly a member of the Mississippi State Medical Association; died suddenly at his home, February 26, from heart disease.

LeRoy F. Weaver, M.D., Lansing, Mich.; Michigan College of Medicine, Detroit, 1884; aged 54; a member of the Michigan State Medical Society; also a druggist; died at his home, March 1, from cerebral hemorrhage.

Irene Hardy, M.D., Massillon, Ohio; University of Wooster, Cleveland, 1881; aged 67; formerly a member of the Ohio State Medical Association; died in the City Hospital, Massillon, February 28, from pneumonia.

Charles Stanton, M.D., Rockham, S. D.; College of Physicians and Surgeons, Keokuk, Iowa, 1892; aged 60; a member of the State Medical Society of Wisconsin; died in his office, Dec. 29, 1916, from heart disease.

William L. Crump, M.D., Salisbury, N. C.; Jefferson Medical College, 1879; aged 59; formerly a member of the Medical Society of the State of North Carolina; died at his home, January 17, from tuberculosis.

George H. Beal, M.D., Elsie, Mich.; Detroit College of Medicine and Surgery, 1892; aged 46; village and township health officer for several years; died at his home, January 1, from valvular heart disease.

Henry M. Wilson, M.D., New Berlin, Pa.; Jefferson Medical College, 1877; aged 66; a member of the Medical Society of the State of Pennsylvania; died at his home, Dec. 11, 1916, from cerebral hemorrhage.

E. Thaddeus Barrentine, M.D., Society Hill, S. C.; Louisville (Ky.) Medical College, 1890; aged 45; a member of the South Carolina Medical Association; died at his home, February 26, from pneumonia.

William R. Wall, Jr., M.D., Cleveland; Cleveland Medical College, 1896; Cleveland College of Physicians and Surgeons, 1899; aged 48; was instantly killed in an automobile accident in Cleveland, March 2.

Joseph Taylor, M.D., Manchester, N. H.; Dartmouth Medical School, Hanover, N. H., 1894; aged 56; a Fellow of the American Medical Association; died in his office in Manchester, March 10.

Herbert Jones, M.D., Hamilton, Ont.; University of Toronto, Ont., 1904; aged 45; major, Canadian A. M. C.; a specialist in diseases of children; died recently from pneumonia, while serving overseas.

George Howard Thompson, Jr., M.D., Seattle Wash.; Cooper Medical College, San Francisco, 1894; aged 50; died in the Hahnemann Hospital, San Francisco, February 22, from myocarditis.

Thomas David Miller, M.D., Kansas City, Mo.; St. Louis College of Physicians and Surgeons, 1883; aged 60; died in Grace Hospital, Kansas City, February 26, after a surgical operation.

Theron W. Horton, M.D., Honcut, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1863; for nearly thirty years a practitioner of Honcut; died at Los Angeles, February 28.

John T. McCarthy, M.D., Baltimore; Baltimore Medical College, 1893; aged 53; a member of the board of police surgeons of Baltimore from 1901 to 1905; died at his home, March 7.

Ora Owen Sawyer, M.D., Dell Rapids, S. D.; Rush Medical College, 1879; aged 60; formerly a Fellow of the American Medical Association; died at his home, March 1, from general paresis.

George T. Parks, M.D., Lancaster, Texas; University of Tennessee, Nashville, 1887; aged 55; a member of the State Medical Association of Texas; died at his home, February 24.

Stephen B. Rosier, M.D., Fayetteville, N. C.; Medical College of Virginia, Richmond, 1855; aged 84; for fifty years a practitioner of Robeson County; died at his home, March 4.

Jacob Butler, M.D., East St. Louis, Ill.; Medical College of Evansville, Ind., 1878; aged 66; formerly a member of the Illinois State Medical Society; died at his home, March 2.

Charles S. McLaughlin, M.D., Glens Falls, N. Y.; University of Vermont, Burlington, 1880; aged 60; surgeon to the Park Hospital, Glens Falls; died at his home, March 5.

A. Lee McCormick, M.D., Cincinnati; Pulte Medical College, Cincinnati, 1883; aged 59; while making a professional call, February 26, died suddenly from heart disease.

Frederick Walter Coffin, M.D., Chagrin Falls, Ohio; Rush Medical College, 1868; aged 71; also a pharmacist; died at his home, February 27, from angina pectoris.

Benjamin F. Welch, Soso, Miss. (license, Mississippi, 1882); aged 66; formerly a member of the Mississippi State Medical Association; died at his home, March 2.

Chester Arthur Winn, M.D., Alton, Ill.; Rush Medical College, 1889; aged 57; died, February 21, in Cuba, Mo., where he had gone in hope of bettering his health.

James T. McDonald, M.D., Ellsworth, Me.; Hahnemann Medical College, Philadelphia, 1890; aged 49; died at his home, January 2, from tuberculosis.

Francis M. Metcalf, M.D., Kansas City, Mo.; Beaumont Hospital Medical College, 1893; aged 55; died at the home of his son in Kansas City, March 10.

Walter F. Burton, M.D., Kansas City, Mo.; Kansas City (Mo.) Hospital College of Medicine, 1885; died at his home, February 28, from chronic nephritis.

William J. French, M.D., Frankton, Ind.; Cincinnati College of Medicine and Surgery, 1879; aged 64; died at his home, March 5, from diabetic gangrene.

Thomas F. Betts, M.D., Philadelphia; University of Pennsylvania, Philadelphia, 1866; aged 73; died at his home in Oak Lane, Philadelphia, March 8.

William Henry Johnston, M.D., Selma, Ala.; New York University, New York, 1867; died recently at his home.

William Dietrich, M.D., West Hoboken, N. J.; Baltimore University, 1905; died at his home, about February 20.

Louis Joseph Wirtz, M.D., West Hoboken, N. J.; Baltimore University, 1904; aged 35; died recently at his home.

John W. Smith, M.D., Plymouth, Ind.; Jefferson Medical College, 1877; aged 61; died at his home, January 2.

James G. Van de Walker, Hammond, Ind. (license, Indiana, 1897); aged 82; died at his home, January 19.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE SARGOL CASE

The Origin, Development and Destruction of a Fraud

The essential facts regarding Sargol, the get-fat-quick nostrum—most of which have already been given in THE JOURNAL—are that its exploiters were found guilty of fraud and were fined $30,000 after promising that the business would be discontinued. The fine was paid and on Feb. 27, 1917, the Post-Office Department issued a fraud order against the Sargol Company denying it the use of the mails.

The Sargol business was started in 1908 by Wylie B. Jones and Oliver C. Kingsley at Binghamton, N. Y. In December, 1912, Kingsley dropped out of, and Herbert B. Woodward went into, the business with Jones. Jones, the controlling power in the concern, is an advertising man, and operates the Wylie B. Jones Advertising Agency at Binghamton. He also conducts another "patent medicine" concern, the "Dr. Howard Company," which sells such nostrums as "Palm Vine," "Dr. Howard's Specific," etc.

Sargol was advertised through newspapers and magazines of a certain type and the business, generally, was conducted on the mail-order plan rather than through drug stores, although a certain amount of drug store trade had been developed at the time it was put out of business. The newspaper and magazine advertisements, together with the other advertising matter that was sent out when a prospective victim had been brought in touch with the Sargol Company, represented in brief:

The Sargol Company was able to defraud the public out of millions because newspapers and magazines were willing to act as paid "go-betweens." Here are photographic facsimiles (greatly reduced) of full page advertisements that at one time appeared in such magazines as *McClure's*, the *Illustrated World*, *Cosmopolitan*, etc. There is also in this group a quarter-page advertisement (reduced) from the *National Druggist*.

THE CLAIMS FOR SARGOL

1. That Sargol was a wonderful new discovery which could be depended on permanently to increase the weight of the body ten, fifteen or even thirty pounds.

2. That Sargol was the result of the combined experience of many prominent specialists in dietetics who believed that the usual diet rules more often fail than succeed.

3. That Sargol was in effect the most marvelous body builder which medical science has produced.

4. That Sargol would, in an incredibly short space of time, produce a marvelous increase in weight regardless of the cause of the lack of weight, whether inherited, from overwork or wasting disease or the result of abuse, dissipation, etc.

5. That when the Sargol "treatment" was under way it was possible for the patient to go about his business as usual and still put on flesh at the rate of a pound a day.

6. That Sargol was a marvel in quickly and permanently rounding out the feminine form, filling out the face to a perfect oval, making the neck and bust firm and plump and rounding out the arms and legs to graceful proportions.

7. That Sargol would put flesh just where it was most needed.

8. That Sargol was the missing link in the chain of human health and vitality—that the certainty of a thin person getting fat depended almost entirely on Sargol.

SARGOL MADE BY PARKE, DAVIS & CO.

Such were the claims by which the Sargol concern pilfered from the public an amount that has been estimated at $3,000,000. When the case came to trial it was shown that Sargol instead of being a wonderful new discovery was, in fact, merely a formula devised after a short consultation between Wylie B. Jones and the man who has charge of the "private formula" department of Parke, Davis & Co. Sargol was made by Parke, Davis & Co. and billed to the "Dr. Howard Co." as "Tonic Tabs," at a price of from 53 cents to 78 cents a thousand tablets; they were sold at the rate of $25 a thousand. When the manager of Parke, Davis & Co.'s "private formula" department was on the stand he testified that his firm made other pills, as well as a vaginal tablet, for the "Dr. Howard Co." The "formula" for Sargol—as devised by Parke, Davis & Co.'s agent and Jones—contained:

Extract saw palmetto	2 Grains
Hypophosphite calcium	½ Grain
Hypophosphite sodium	¼ Grain
Hypophosphite potassium	¼ Grain
Lecithin	⅛ Grain
Extract nux vomica	1/12 Grain

The trial lasted thirteen weeks. Mr. O. B. Williamson, a post-office inspector, collected the evidence for the government and was assisted by post-office inspectors Frank E. Shea of New York and Samuel J. Killian of Binghamton. The government called, among other experts, Drs. Louis F. O'Neill and J. P. Creveling of Auburn, N. Y., Dr. Harvey W. Wiley of Washington and Dr. Lyman F. Kebler of the Bureau of Chemistry. In addition to his testimony, Dr. Kebler gave Mr. F. J. Cregg, the United States Attorney who had charge of the case, invaluable assistance during the entire course of the long drawn out trial. The medical testimony submitted by the government proved beyond controversy that the pretenses set out by the Sargol concern were absolutely worthless so far as flesh or tissue building is concerned. It was admitted that some of the constituents were in some degree tonic but that none of them, taken singly or in combination, could affect the weight of the thin or emaciated. It was further brought out that even if Sargol were efficacious in increasing weight in a given case, the representations made for it would still have been false and fraudulent because they were so comprehensive as to include increase in weight of those who were thin from any cause. Judge Lamar, solicitor for the Post-Office Department, summed up the matter in his memorandum to the Postmaster-General:

". . . it is a well recognized medical fact that in order successfully to overcome this condition it is necessary to individualize the case, determine the cause of the condition, and prescribe for the subject a treatment adapted to his own case; and that no one treatment could by any possibility supply the lack of weight in all individuals regardless of the causes thereof or of the particular conditions present."

The trial also brought out the fact that people suffering from lack of weight due to tuberculosis, diabetes, Bright's disease or chronic diarrhea extending over a long period of years who wrote to the Sargol Company were urged to use Sargol and told that it would overcome the lack of weight. It was also shown that persons who had written to the company stating that they were suffering from nervousness and excitability following the removal of the ovaries,

and due to such conditions as long continued dyspepsia, catarrh of the bladder of nine years' standing, abdominal tumor and pernicious anemia, also were told to take Sargol and informed that it would overcome their nervousness and irritability.

Of course, the Sargol Company had no difficulty in producing "experts" to uphold its claims. There never was a medical swindle so preposterous that members of the medical profession could not be hired to defend it. The Sargol case

Extensive advertising was done in the newspapers both in the United States and Great Britain. In addition, the Sargol Company sent out large quantities of advertising circulars. Here are greatly reduced facsimiles of some of the advertising from these sources.

recalls the disgraceful state of affairs that was disclosed at the Wine of Cardui trial when the American Medical Association was put on the defensive because of its activities in attempting to protect the public from medical humbug. In that trial the "patent medicine" interests were able to employ members and fellows of the American Medical Association who not only lent aid and comfort to the enemies of the public health but attempted to discredit the testimony of decent physicians who belonged to the same organization of which these persons were members.

SARGOL "EXPERTS"

So in the Sargol case we find appearing in defense of this outrageous fraud physicians who, by virtue of their membership in their county and state societies, were enabled to become Fellows of the American Medical Association. They were:

ERNEST ELLSWORTH SMITH, M.D., New York City.—Member of the New York Medical Society, Member of the Medical Society of the State of New York.

HOWARD L. DAVENPORT, M.D., Auburn, N. Y.—Member of the Cayuga County Medical Society, Member of the Medical Society of the State of New York.

MICHAEL P. CONWAY, M.D., Auburn, N. Y.—Member of the Cayuga County Medical Society, Member of the Medical Society of the State of New York.

GIBSON BENJAMIN MACK, M.D., Auburn, N. Y.—Member of the Cayuga County Medical Society, Member of the Medical Society of the State of New York.

Ernest Ellsworth Smith, who testified that he devotes himself "especially to the specialty of nutrition," has appeared against the government in a number of cases. In 1910 the government was making a determined effort to break up the traffic in rotten eggs, a business that had reached huge proportions. For three years previously it had tried to put a stop to the business without any great amount of success. Then it prosecuted a man who was said to be the largest dealer in putrid eggs in the "rotten-egg district" of New York. He was charged with shipping a putrid mass of frozen egg product containing mold, blood clots, heads of embryo chicks, etc. After a trial before a jury he was found guilty and fined the maximum penalty for a first offense under the federal law. The "expert" employed by this dealer in rotten eggs in defending himself against the government's charges was Ernest Ellsworth Smith!

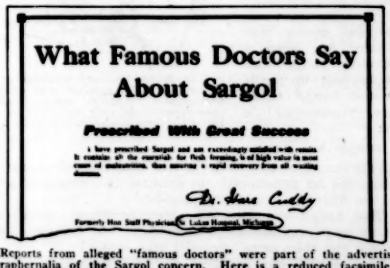
In 1912 the United States government proceeded against a concern that sold "specialties" for confectioners. One of the "specialties" the company was charged with selling was a varnish used, it seems, in the trade, for the purpose of coating fudge candy. This varnish, the government charged, contained appreciable quantities of arsenic. The company was found guilty by the jury, although it afterward appealed the case. The company employed an expert in this case whose testimony was to the effect that the amount of arsenic present would not, in his opinion, be injurious to health. This expert was Ernest Ellsworth Smith!

In 1915 the government seized a number of packages of "Dr. Williams' Pink Pills for Pale People." This "patent medicine" was sold as a remedy for locomotor ataxia, partial paralysis, St. Vitus' Dance, rheumatism, leukorrhea, dysmenorrhea, spermatorrhea, impotence, etc. These claims the government charged were false and fraudulent. The Dr. Williams Medicine Company took exceptions to the government's actions and attempted to defend the claims. The jury, however, decided that the government's contention was right and the court ordered the stuff destroyed. The company in this case also appealed. One of the experts to testify to the wondrous virtues of Williams' Pink Pills for Pale People was Ernest Ellsworth Smith. Smith admitted that he had prescribed these pills without a full knowledge of their composition.

In addition to the medicolegal activities, Smith's articles on behalf of sodium benzoate, which appeared at the time of the controversy on this subject, will be remembered by many. Many physicians have doubtless received a brochure stamped "With Author's Compliments" and dealing with "Protein Diet for the Sick and Convalescent." It is a puff for that preposterously advertised nostrum "Sanatogen"; its author is E. E. Smith!

A "BUST DEVELOPER" ADVERTISEMENT!

Before leaving Dr. Smith, the following extract from the testimony during the Sargol trial is much too interesting to be allowed to remain buried in legal archives. Dr. Smith is



Reports from alleged "famous doctors" were part of the advertising paraphernalia of the Sargol concern. Here is a reduced facsimile of what purported to be a report from "Dr. Hare Cuddy, Formerly Hon. Staff Physician, St. Luke's Hospital, Michigan." If there ever was a Dr. Hare Cuddy, we have been unable to locate him. The "St. Luke's Hospital" was a fraudulent concern that existed only on paper. Quacks all over the country have "certificates of membership" framed in their offices purporting to show that they are on the "staff" of "St. Luke's Hospital."

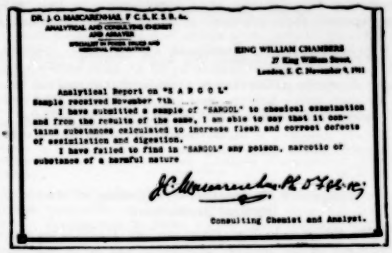
testifying as to the effect of saw palmetto on a flat-chested but otherwise normally healthy female:

> "*Question.*—What is the effect, if any, as you have spoken of, of the use of sabal (saw palmetto) on the bust of a female?
>
> "*Dr. Smith.*—In the thin undeveloped condition of the bust the effect is to stimulate the growth and development of the bust to the ideally normal condition."

Of the other physicians who testified for the Sargol concern, Dr. Mack of Auburn was withdrawn from the stand

before his testimony was completed and all of his testimony stricken from the record. This action followed his cross-examination by Attorney Cregg when it was shown that Dr. Mack was the family physician of one of the jurors and before testifying had discussed the probable effect his testimony might have on this juror.

Drs. Conway and Davenport both testified, in effect, that, among other things, taking four Sargol tablets a day for sixty days would increase the weight of a person who was



DR. J. C. MASCARENHAS, F.C.S., K.S.B., &c.
ANALYTICAL AND CONSULTING CHEMIST AND ANALYST
KING WILLIAM CHAMBERS
27 King William Street,
London, E.C. November 9, 1911

Analytical Report on "S A R G O L"
Sample received November 7th

I have submitted a sample of "SARGOL" to chemical examination and from the results of the same, I am able to say that it contains substances calculated to increase flesh and correct defects of assimilation and digestion.

I have failed to find in "SARGOL" any poison, narcotic or substance of a harmful nature

J. C. Mascarenhas F.C.S. K.S.B. &c.
Consulting Chemist and Analyst.

Fake "analytical reports" were also used by the Sargol concern. Here is a reduced facsimile of one of these. Sargol is not the only humbug that Mascarenhas has "reported" on.

naturally thin or who had become thin following some wasting disease or who was thin through malassimilation of food or from nervous indigestion of long standing. They further testified, in effect, that Sargol would tend to increase the weight of a tuberculous subject and would remove such nervous irritability or excitability as might follow the removal of the ovaries. Dr. Conway testified that in cases of pernicious anemia the "individual's blood would be changed for the better" by taking Sargol and that in cases of catarrh of the bladder Sargol would be of marked benefit because it would tend to increase weight and to cure the local condition. Dr. Davenport expressed the opinion that Sargol would tend to increase the weight of consumptives and of persons suffering from "kidney trouble," chronic diarrhea, catarrh of the bladder and pernicious anemia.

THE WORTHLESS "GUARANTY"

In common with most medical mail-order fakers, the Sargol Company published an alleged guarantee promising to return without question the price paid for the treatment if the purchaser did not regard the results as satisfactory. After the purchase had been made this promise was qualified in such a manner as to make it of little, if any, value to the purchaser. The victim was advised that in order to obtain a refund it would be necessary for him to certify that he had taken the treatment faithfully every day and that during the entire period he had not been subject to any attack of sickness. Furthermore, it was necessary that he have two witnesses certify to the same fact. An additional requirement was that all the box covers in which the Sargol came, six in all, must be returned as a prerequisite to the refund.

FAKE ANALYTICAL REPORTS

The Sargol concern, to strengthen its claims for the nostrum, published what purported to be analytical and professional reports from alleged famous physicians and chemists. One of the reports was from a "Dr. J. C. Mascarenhas, F. C. S., K. S. B., &c" of London. Our files show that Mascarenhas has been connected with a fake degree-conferring organization, the "Society of Science, Letters and Art of London." Other American "patent medicine" fakers use his alleged analytical reports as advertising ammunition. Mascarenhas' report says that he failed to find any "poison" in Sargol. This may be due to the fact that the Sargol sold in Great Britain, unlike that sold in this country, had no strychnin in it. The British law would have required the package to be labeled "poison" had it had the composition of the American Sargol.

Another testimonial from an alleged "famous doctor" was from one "Dr. Hare Cuddy, Formerly Hon. Staff Physician, St. Luke's Hospital, Michigan." As many of THE JOURNAL readers remember, "St. Luke's Hospital," which existed chiefly on paper, was a scheme conducted from Niles, Mich., by a quack named Probert who peddled certificates of membership in the hospital—price $25. Quacks all over the country have these "diplomas of membership" framed in their offices. In commenting on the alleged noted endorsers of Sargol, the solicitor of the Post-Office Department said: "The investigation developed the fact that in some instances there never had been such physicians *in esse* and that in other instances they were quacks entitled to no credence whatever."

THE PROFESSION'S RESPONSIBILITY

The Sargol case has many points of interest to the profession. For some years the Propaganda department of THE JOURNAL has been receiving letters from physicians calling attention to Sargol and asking why it was possible for such an obvious swindle to be perpetrated year after year, and no action be taken. The facts in the Sargol trial answer this question. The postal authorities went to great trouble to collect evidence for the purpose of protecting the public against this fraud. The trial lasted many weeks and is said to have cost the United States more than $100,000. Although the business was palpably fraudulent, although the claims made for the nostrum were patently false, the defendants were able to employ physicians, who held membership in their local societies and, through that membership, fellowship in the American Medical Association, to go on the stand and swear that Sargol was a "flesh builder" and "bust developer"! Is it any wonder when such conditions obtain within the medical profession that officials whose duty it is to protect the public against fraud hesitate to attack humbugs of a medical nature? Medical fraud flourishes not only because of the credulity of the public but also because of the low ideals or the venality of a few members of the medical profession.

Correspondence

Unauthorized Use of Name of Dr. W. W. Keen

To the Editor:—March 2, I received from Dr. S. R. Maxeiner, secretary of the Hennepin County Medical Society in Minneapolis, a letter enclosing a copy of a letter sent out by the Lawrence Sanatorium of Minneapolis. Since then I have received two other identical letters signed personally by W. D. Lawrence, of whom I had never before heard.

These letters disclosed the fact that Lawrence was using my name without authority as a quasi-endorsement of his sanatorium. The three letters are identical in wording. They begin:

> We are pleased to announce that we have recently associated with our Sanatorium staff a very eminent surgeon who until the past year has been surgeon-in-chief of a large European hospital.
>
> Dr. W. W. Keen . . . in a letter of introduction said,
>
> "I take pleasure in introducing to you my friend, Dr. Egilsrud, of Norway," etc.

I enclose also two cards, one called an "associate physican's card," in which W. D. Lawrence announces to every doctor to whom these cards have been sent that he is an "associate physician" of the sanatorium and is entitled "to a fair participation in all fees from patients referred by you with introduction to the Lawrence Sanatorium." The other card is one which is to be sent by the associate physician introducing his friend Mr. —— to the Lawrence Sanatorium.

The simple facts are these: I had had some correspondence with Dr. Egilsrud about the middle nineties. In 1899 I saw him very pleasantly in Tromsö, Norway. Somewhat over a year ago Dr. Egilsrud made his second visit to the United States. He had left Norway in consequence of the war, and wanted to establish himself in this country and then bring his family over. Besides this he wished to do some professional writing. I urged him to go to the Northwest, especially to Minnesota, where many Scandinavians were settled. While

there he should perfect himself in English, then pass the examination and enter into practice.

I gave him personal letters to a number of physicians by name, but as he was very uncertain where he would settle, I think I gave him an additional letter not addressed to any particular surgeon, or possibly it may have been addressed "To whom it may concern." When one is doing a friendly act like this one does not preserve a copy of such letters. Hence my uncertainty.

The wording of this circular of W. D. Lawrence that Dr. W. W. Keen in a letter of introduction said "I take pleasure in introducing to you my friend, Dr. Egilsrud, of Norway," etc., while it does not so state distinctly, would lead any superficial reader to suppose that I had given a letter introducing Dr. Egilsrud to W. D. Lawrence, and had thus impliedly endorsed the Lawrence Sanatorium and its methods, which I never would do.

My interest in the welfare of Dr. Egilsrud, who is a most excellent surgeon, was the sole motive for my doing what I could to help him as a friend.

I have never yet given a letter knowingly, or in any other way recognized a fee-splitting institution such as this is. I beg to warn any one against accepting the statement made by W. D. Lawrence as to myself. I have written to W. D. Lawrence, forbidding him hereafter to use my name in any manner whatsoever.

I should add that I have received a letter from Dr. Egilsrud, dated March 6, in which he shows that in his ignorance of American customs he has been innocently misled into his association with this sanatorium.

W. W. Keen, M.D., Philadelphia.

Why I Favor Compulsory Health Insurance

To the Editor:—I favor compulsory health insurance:

1. Because I believe that medical science and art, the creation of generations of effort and experience, cannot rightfully be used for the exclusive benefit of the few.

2. Because, having an instinctive desire to see fair play, I cannot be indifferent to a public measure which aims to protect the bodies of children from disease, just as our public school system seeks to protect their minds from premature arrest and decay.

3. Because I have learned from personal contact with thousands of hospital patients, and through investigations carried on in the homes of such patients by district nurses, that free hospital care, without other aid, only partially relieves the distressing situation which arises in the home of a worker whose earning power ceases when he is stricken with disease.

4. Because a large proportion of the industrial workers of the community are without needed medical attendance.

5. Because a still larger proportion, though receiving some medical attention (chiefly gratuitous), do not receive prompt or adequate medical care.

6. Because under existing conditions, workers whose wages are below $1,200 per annum cannot purchase adequate medical care for themselves or their families.

7. Because I believe that a high grade of medical service for the great mass of the wage-earning population is unattainable without organization.

8. Because under voluntary health insurance most of those who need health insurance do not obtain it.

9. Because I believe that the health of the people is the proper concern of the state.

10. Because I believe that the employer has a certain measure of responsibility for, and an economic interest in, the health and welfare of his employees.

11. Because industrial conditions which are inimical to health can be most readily disclosed and most effectively dealt with under a scheme of health administration in which the insured workers are grouped mainly according to occupation.

12. Because an insurance fund to which the state, the employer and the employee contribute should be collected and distributed by the representatives of the three contributing members or groups, for the sole benefit of the insured.

13. Because I believe that medical men should participate actively in the management of any organization which involves the activities and welfare of a large part of the medical profession.

14. Because the measures under consideration in New York and elsewhere (I refer to the so-called "standard" bill) are the result of long study of existing conditions by competent and disinterested persons, and of hundreds of discussions and conferences in which every shade of industrial, social and medical opinion has been represented; and because, after painstaking investigation, state commissions in two states have reported their approval of the principles embodied in the bill.

15. Because the most progressive life insurance companies, while under no legal obligation to do so, have within recent years voluntarily undertaken to provide certain medical benefits for their policy holders, thus tacitly admitting that medical neglect is a common condition among policy holders.

S. S. Goldwater, M.D., New York.
Director, Mount Sinai Hospital.

Temporary Suspension of Activities of the Medical Brotherhood

To the Editor:—In The Journal, July 31, 1915, an appeal to members of the medical profession was published which was signed by a committee composed of about 150 members of the leading medical men of this country. The attention of the profession was called to the facts that no discovery in medical sciences has been utilized by any of the belligerents in the present European war for the purpose of destroying the enemy; that the services of medical men in each of the warring countries consists exclusively in ministering to the sick and to the injured, and finally that in these humanitarian services friends and foes are treated alike. This appeal led to the establishment of the Medical Brotherhood, which contains at present about 16,000 members, all of whom are American citizens with the exception of Sir Wilfred Grenfell. The vast majority of members belong to the American Medical Association. Not a single individual has withdrawn his membership. Many prominent men from other neutral countries asked to be enrolled in our organization. In most of these countries, organizations similar to ours were established.

The purpose of my present communication is to state that on the second of last month, that is, as soon as the last German note on its U-boat policy became known, and before our president delivered his address before Congress, *I suspended sending out our literature.* It seemed quite evident to me that the German note would lead to a serious tension between our country and the central powers and perhaps even to war. A transitional stage of suspense and confusion was bound to come, and it seemed to me to be the duty of every citizen to avoid anything which might be misconstrued. It was conceivable that the activities of the Medical Brotherhood might be interpreted by some as being unpatriotic and not in line with the duties of a citizen to his country and its government.

For this temporary suspension of our activities the president of the brotherhood takes the entire responsibility.

S. J. Meltzer, M.D., New York.
President of the Medical Brotherhood.

"Current Views Regarding the Tonsils and Their Surgical Removal"

To the Editor:—Your editorial on this subject (The Journal, March 17, 1917, p. 851) is at least amusing, if not scientific. Experience is of more value than theory; therefore, if you wish to discuss a subject scientifically, you should place yourself in a position to see clinical results. Consequently come to western Kansas where "inflamed tonsils," are removed daily for the cure of arthritis, nephritis, endocarditis and the prevention and cure of otitis media and its complications, as well as the "tonsillitis." Come out where we treat "diphtheritic tonsillitis" by removing the foci of infection and without administering "antitoxins."

Thomas L. Higginbotham, M.D., Hutchinson, Kan.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BETAIN HYDROCHLORID AND HYDROCHLORIC ACID—ACIDITY OF URINE—ESTIMATION OF SECRETION—ALBUMINOUS FOOD REMNANTS IN STOOL

To the Editor:—Please answer the following questions:

1. How does betain hydrochlorid compare with dilute hydrochloric acid weight for weight? Is it as efficient as the latter in the treatment of anacidity? Can it produce any deleterious effects when taken over a long period of time? Please give references to the literature on the subject.

2. Is the reaction of the urine affected by hyperacidity or hypoacidity of the stomach?

3. Is it logical to make deductions from a single estimation of the hydrochloric acid in the stomach?

4. Is the presence of an abnormal amount of undigested albuminous elements in the stool always presumptive evidence of anacidity?

Please omit my name if these questions are answered in THE JOURNAL. X. Y. Z.

ANSWER.—1. Betain hydrochlorid contains 23.8 per cent. of absolute hydrochloric acid, and the usual dose, 0.5 gm. (8 grains), corresponds to about 1.1 c.c. (18 minims) of dilute hydrochloric acid, U. S. P. Betain hydrochlorid in solution dissociates hydrochloric acid, but it does not dissociate it completely so that it is not quite so efficient in aiding the action of pepsin as an equivalent amount of hydrochloric acid. The use of betain hydrochlorid as a substitute for hydrochloric acid has no obvious advantage over the use of hydrochloric acid itself, and it is far more expensive. The pharmacologic effect of the betain part of the molecule is similar to that of chlorin, but is not so strong. It lowers blood pressure. It is apparently not toxic to rats even in enormous doses, but it is impossible to say whether if administered over a long period of time to human beings it might not produce some effect. Its pharmacology is not very well known. A short statement of its action will be found in New and Nonofficial Remedies, 1917, and in Sollmann's new Manual of Pharmacology, and some references are there given to the literature. Its action in peptic digestion will be found in a paper by J. H. Long, "On the Physiological Activity of Combined Hydrochloric Acid" (Jour. Am. Chem. Soc., 1915, **37**, 1333).

2. The urine normally becomes less acid or even alkaline when hydrochloric acid is secreted in the stomach. There is, however, no known definite relation between hyperacidity, anacidity or hypo-acidity in the stomach and urine reaction. The urine may be reduced in acidity in conditions of anacidity in the stomach instead of being more acid, as one might expect. The reaction of the urine is closely dependent on the food. A protein diet, or the metabolism of the proteins of the body, tends to make the urine acid by the production of sulphuric, phosphoric and some organic acids. The ash of meat is acid whether this burns in or out of the body. A vegetable diet reduces acidity of the urine because vegetables and fruits contain the alkali salts of organic acids which are burned in the body to carbonates, which are alkaline, and these are excreted in the urine. The ash of plants is alkaline.

3. No. Several examinations should be made before safe conclusions can be drawn.

4. No. Much depends on the amount and character of the protein eaten, on the completeness of mastication, on motility of the tract, and on conditions in the intestine. Simon says that muscle fibers are found in every stool whenever meat has been eaten. Under normal conditions, however, they are not numerous, unless particularly large quantities have been ingested. In pathologic conditions it is necessary to determine whether or not albuminous food remnants are present in abnormal amounts, presupposing, of course, that abnormal quantities have not been taken. An increase in such food remnants will be observed in such conditions. Webster says that lack of digestive power of the stomach itself will have little influence on intestinal digestion, provided the pancreatic secretion is sufficiently active, with the exception that raw or smoked connective tissue will be undigested and will appear in the feces. Motor disturbances of the stomach and intestine must also be taken into consideration when food residues greater than normal in amount are found in the feces. Webster again says, lientery is much less frequent in motor disturbances of the stomach than in those of the intestine. In cases of increased intestinal motility, more food residue will be found in the feces than under normal conditions. Marked disturbances of protein and fat digestion, evidenced by intense lientery, will occur if the pancreatic secretion is insufficient. This is even more marked if gastric disturbance coexists. A final factor which influences lientery is the insufficiency of the absorbing power of the intestine. This increases the food residue by retarding digestion. Only in exceptional cases, Webster says, can one judge of the specific factor at the bottom of lientery; a boundary lying between the normal and the abnormal being drawn with difficulty.

THE SCHMIDT DIET

To the Editor:—Please give me a list of the foods and amount of each which make up a Schmidt diet in the treatment of diarrhea, so much spoken of in Cabot's differential diagnosis.

Please omit my name if this is published. W. H.

ANSWER.—Schmidt's diet consists of 1.5 liters of milk; zwieback, 100 gm.; 2 eggs; butter, 50 gm.; beef, 125 gm., raw weight; boiled potato, 190 gm., and a gruel made of 80 gm. of oatmeal. This is distributed throughout the day as best suits the patient. The diet contains 102 gm. of protein, 111 gm. of fat and 191 gm. of carbohydrates, yielding 2,234 raw calories. In cases which show a diarrhea due to the milk, instead of 0.5 liter of milk, the same amount of cocoa made from 20 gm. of cocoa powder, 10 gm. of sugar, 100 gm. of milk and 400 gm. of water may be used. Small variations in the amount of milk, sugar, butter and even of eggs may be permitted, but the outline as regards meat, zwieback, potato and gruel should be rigidly adhered to.

LITERATURE ON INDUSTRIAL DISEASES

To the Editor:—I would appreciate very much if you can give me a list of textbooks or recent publications dealing with industrial diseases.

GORDON BATES, Toronto.

ANSWER.—

Oliver: Dangerous Trades, New York, E. P. Dutton, $8; Diseases of Occupation, New York, E. P. Dutton, $3; Lead Poisoning, New York, Paul B. Hoeber, $2.

Greer, W. J.: Industrial Diseases and Accidents, Bristol, J. W. Arrowsmith, 1909, 339 pages.

Rambousek, J.: Industrial Poisoning, New York, Longmans, Green & Co., 1913, 360 pages, $3.50 net.

Thompson, W. G.: Occupational Diseases, New York, D. Appleton Company, 1914, $6.

Kober and Hanson: Diseases of Occupation and Vocational Hygiene, Philadelphia, P. Blakiston's Son & Co., $8.

Ligge: Lead Poisoning, New York, Longmans, Green & Co., $3.50.

Hansen: Dusty Trades, Bulletin 127, U. S. Bureau of Labor Statistics.

Studies in Vocational Diseases, 1, Schereschewsky, J. W.: The Health of Garment Workers; 2, Schereschewsky, J. W., and Tuck, D. H.: Hygienic Conditions of Illumination in Workshops of Women's Garment Industry, Public Health Bulletin 71, Washington Government Printing Office, 1915, 40 cents.

TIME ALLOTTED BY CZERNY TO READING

To the Editor:—The "Hygienic Testament" of the late Professor Czerny (Berlin Letter, THE JOURNAL, March 10, 1917, p. 791) is very interesting, but raises the question of accurate translation in several places. The lack of mention of reading is made more conspicuous by the large amount of time given to "art and lectures," namely, two hours. Perhaps the translator thought of the lectures given by the professor himself; but is not the word *Lectüre*, and should it not be translated "reading"?

X. DEUTSCH.

ANSWER.—The original word was *Lektüre*, and should, of course, have been translated as "reading."

NASAL OBSTRUCTION WITH RENAL INSUFFICIENCY AND ECLAMPSIA IN PREGNANCY

To the Editor:—Eight cases of nasal obstruction with renal insufficiency and eclampsia in pregnancy have occurred in the practices of myself and of a colleague at this place. All the patients have been mouth breathers. Is it not possible that the poor oxygenation of the blood is largely responsible? The success of the continuous oxygen treatment would suggest that if the system had been freely supplied with oxygen, the eclampsia would not have developed.

T. L. THOMSON, M.D., Torrington, Conn.

ACTIVE PRINCIPLE OF LEECH SECRETION

To the Editor:—Please inform me what the active principle is in the secretion of the leech which prevents clotting.

M. G. ATKINSON, M.D., Watertown, N. Y

ANSWER.—The active principle of the buccal secretion of the leech (herudin) appears to be a deutero-albumose. See *Chemisches Centralblatt*, 1903, p. 254.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phoenix, April 3-4. Sec., Dr. John Wix Thomas, 306 Goodrich Bldg., Phoenix.

California: Los Angeles, April 10. Sec., Dr. Charles B. Pinkham, 529 Forum Bldg., Sacramento.

Colorado: Denver, April 3. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

District of Columbia: Washington, April 10. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

Idaho: Boise, April 3. Sec., Dr. Charles A. Dettman, Burke.

Minnesota: Minneapolis, April 3-6. Sec., Dr. Thomas S. McDavitt, 741 Lowry Bldg., St. Paul.

Missouri: St. Louis, March 26-28. Sec., Dr. J. A. B. Adcock, 325 E. High St., Jefferson City.

Montana: Helena, April 3. Sec., Dr. W. C. Riddell, Helena.

Oklahoma: Oklahoma City, April 10-11. Sec., Dr. Ralph V. Smith, 502 Daniel Bldg., Tulsa.

Porto Rico: San Juan, April 2. Sec., Dr. Quevedo Baez, San Juan.

Rhode Island: Providence, April 5-6. Sec., Dr. Gardner T. Swarts, State House, Providence.

Utah: Salt Lake City, April 2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

A CHIROPRACTIC DOCTOR FACTORY

The so-called "American University" is an excellent example of the travesties on education which are the direct result of the inexcusable custom in most of our states of granting charters to "educational" or degree-granting institutions without first making inquiry regarding their ability or facilities for furnishing an education. Do the words "school," "academy," "college" and "university" really stand for educational institutions, or do they not?

So far as can be learned, the American University owns no college building, no laboratories, no dispensaries and no hospitals; nevertheless, it brazenly professes to prepare "doctors" to treat all classes of human ailments. Its only habitation thus far discovered is a small suite of rooms on the third floor of an old office building in Chicago. This building bears no sign to indicate that it is a university, and in the directory, high up on the wall, in the entrance to the building only a close search reveals the sign which indicates that the building houses so important a tenant! When the investigator wends his way to the third floor he discovers a door on the glass of which he reads:

"American University, 310-312. American College of Mechano-Therapy. F. S. Tinthoff, S. J. Tinthoff, W. L. LeBoy, M.D., E. Juhl, M.D."

Possibly the American College of Mechano-Therapy is another "department" of the "American University." At any rate, from reports it is quite evident that it is "a bird of the same feather."

Our present concern with the American University is in regard to its "department of chiropractic," which issues a pretentious announcement of sixty-four pages. This announcement sets forth such courses of instruction as it professes to give; contains many testimonials regarding the princely incomes being earned by chiropractors; shows a facsimile of its "beautiful diploma, handsomely lithographed," which is further described as having a "prepossessing appearance which will add to the professional dignity of any office," and contains numerous other catch phrases intended to attract the dollars from the credulous and unwary.

What use, indeed, would this institution have of buildings, laboratories or equipment, since it makes no pretense of giving a resident course? In fact, its announcement does not mention such a course, but lauds its "extension," or home study, course, by which chiropractic can be "more easily acquired than the other forms of healing."

Much stress is laid on the ease with which this home study course may be obtained. In fact, no preliminary education seems essential. Says the announcement: "You do not need a collegiate education to render you fit to study chiropractic. A common school education is all that is required." Even a common school education would not appear to be necessary for the course offered, and it would be a safe guess that no student was ever rejected for the lack of it. Says the catalogue: "It does not require the years of education needed in other lines"; but some "students complete the work in four months." Even then a student need not spend all his time in study, but can "pursue his ordinary occupation while studying the course."

The greatest activity of this "university" is in its mailing department, and it is evidently doing a land office business. Within three months' time one of its "prospects" received five voluminous communications, containing altogether forty-five enclosures, including announcements, testimonials, booklets, varicolored leaflets, etc. Extensive use is made of the system of "follow-up" letters containing the usual catchy subterfuges for separating dollars from the unwary, such as offers of courses costing $100, marked down to $68.75; allowing fees to be paid in instalments of $25, marked down to $12.75, or of $15, marked down to $8; offers of commissions for new students, and certificates offering free the first five lessons, if enrolment is sent in by a certain date.

The announcements abound with statements calling the attention of the reader to the possibilities of "financial success" if he but invests his money with this school; of "the rewards that are awaiting" his command; the possibilities of "successful results" and of "reaping a rich harvest"; the "opportunities for any chiropractor to earn from $1,200 to $12,000 per year"; that "chiropractic may be practiced with profit and success"; that it is "a most pleasant and profitable profession," etc.

There are also the usual lot of comments running down physicians and the practice of medicine; references to "noxious and poisonous drugs"; statements that "physicians are abandoning the old form for chiropractic," etc.

What, indeed, is the use of spending ten or eleven long years in high school, college, medical laboratories, dispensaries and hospitals, with the expense of thousands of dollars, which such a course entails, when in four months of home study, while one is "pursing his regular occupation," and for only "$100, marked down to $68.75," he can secure from this institution a "beautiful diploma, handsomely lithographed," which (he is led to believe) will make him eligible to treat all classes of human ailments and to "reap a rich harvest" by exacting large fees from his credulous patients!

Louisiana December Report

Dr. E. L. Leckert, secretary of the Louisiana State Board of Medical Examiners, reports the written examinatioon held at New Orleans, Nov. 30-Dec. 2, 1916. The total number of subjects examined in was 11; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 18, of whom 16 passed and 2 failed. Five candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Medical College of Alabama	(1905)	87.5
Tulane University of Louisiana (1916) 85.2, 86.9, 87.6, 89.6,		92.3
Johns Hopkins University	(1914)	92.9
Meharry Medical College	(1916)	82.4
Memphis Hospital Medical College	(1911)	81.7
University of Tennessee (1913) 83.6; (1914)		77
Vanderbilt University (1914) 89.8; (1916) 88, 89.9, 90.1,		90.1
FAILED		
Eclectic Medical Institute	(1879)	41.7
Meharry Medical College	(1916)	73.7*

* Conditioned in two subjects.

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Atlanta Medical College (1914)	(1916)	Georgia
Tulane University of Louisiana	(1914)	California
University of Michigan Medical School	(1916)	Michigan
Vanderbilt University	(1915)	Arkansas

Ohio Reciprocity Report

Dr. George H. Matson, secretary of the Ohio State Medical Board, reports that 5 candidates were licensed through reciprocity, Jan. 2, 1917.

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of Illinois	(1915)	Illinois
Woman's Medical College of Pennsylvania	(1915)	New York
Meharry Medical College	(1894)	Kansas
Vanderbilt University	(1915)	Michigan
University of Virginia	(1906)	W. Virginia

Social Medicine, Medical Economics and Miscellany

EXPERT TESTIMONY*

J. H. LANDIS, M.D.
President, Cincinnati Academy of Medicine
CINCINNATI

Several weeks ago, ex-Judge Littleford of the Court of Common Pleas of Cincinnati tossed a verbal bomb into the medical camp. Its explosion did as much damage to the lawyers as it did to the doctors. Both professions and the general public were interested and, judging from numerous expressions from numerous people, anxious to see treatment of the case carried well beyond the stage of first aid to the injured. It may be well to quote the testimony as reported in the press, testimony which, to the best of my knowledge, has not been repudiated by Judge Littleford. The credibility of medical expert testimony was under question when the following statements are alleged to have been made:

> I knew there was nothing in court so absurd but you could get the best doctors to testify it was all right, provided they got enough money for it. For instance, I know there were doctors in the Thaw case who testified he was insane and some of the same doctors would come back and testify he was perfectly sane if they got money for it . . . That is my experience after thirty-three years of practice. The doctors are the worst to testify. All they want is the money It is a question of who gets to the doctor first. They would prove anything on either side of the case—that has been my experience with them.

In answer to the question, "Well, you say the thing they are looking for is the fee," Judge Littleford replied:

> It is the only question with a doctor in a community, who gets there first with the money, provided you have the most. If you get there with ten dollars, he probably won't come; but if the other side gets there with fifty dollars, he will go to work and prove anything.

The statements quoted leave nothing to the imagination. The best doctors being for sale at prices ranging from ten to fifty dollars, it necessarily follows that, if the best doctors can be had for these prices, the worst ones will probably be found assembled in bunches marked with a selling price so low as to be a source of mortification to the entire profession.

What follows is not directed toward the legal and medical professions as a whole, but to the minority in both professions who are responsible for the contempt in which expert medical testimony is held. It is applicable to all varieties of expert testimony, for the rule of averages applies not only to medicine and law but to all varieties of business and occupation. If any one outside of these two professions believes that they have a corner on all the crooked experts in the world, all that is necessary to convince him of his error is for him to follow the court proceedings in cases calling for the admission of expert testimony of any kind.

Since the publication of Judge Littleford's testimony, a number of questions have been asked, practically all of them developing some different angle of the problem. The questions would lead one to infer that the professions of medicine and law are reeking with corruption, an inference which does a gross injustice to the great majority of the men in both professions. Charges of corruption are exceedingly easy to make and correspondingly difficult to prove. It is unusual to find a satisfied, unsuccessful litigant, and it is the unsuccessful litigant who is most apt to claim that corrupt testimony has brought about an adverse verdict.

One of the most difficult things to prove is the guilt of a physician charged with a criminal operation, and yet practically every physician believes that this crime is of common occurrence and that the criminals are known.

The sweeping charge that doctors are influenced in the character of the testimony given by the fee paid may or may not be true. Coming from "an officer of the court," a mere layman may be pardoned for wondering why the information on which the charge is based is not presented to a grand jury.

I have no knowledge of corruption in either profession, and by that is meant *legal* proof of corruption. I do know that the value of expert testimony has been seriously questioned and that newspaper articles and the spoken word have all but destroyed public confidence in expert testimony of all kinds.

The answers to the questions are based on what I have heard and read (hearsay evidence), which is not competent testimony. My reasons for bringing the subject to the attention of members of the American Medical Association is a desire to deny that all doctors and lawyers are bad men and a hope that changes in the rules governing the admission of expert testimony of all kinds will remove any temptation which may exist to either buy or sell this commodity.

The question has been asked, "What conduct or lack of ethics causes most criticism of the medical profession and expert medical testimony?"

The entire medical profession is criticized because of a very small minority of members who, if they had not become physicians, would have followed a natural bent for blackmail, counterfeiting, burglary or highway robbery. Having been deflected from this natural tendency, they find expression in more refined and less risky channels of activity. One of these is in furnishing corrupt expert testimony.

Hypothetic questions are constructed for the specific purpose of securing the desired answer. They should bring answers which are in practical agreement with opinions from reputable practitioners of the specialty involved. When the answers are in violent opposition, the public draws one of two conclusions: the doctors in the case know nothing at all concerning the conditions under question, or their answers are influenced by the fee paid. Some people are old-fashioned enough to call this perjury. Either of the foregoing conclusions penalizes the entire profession.

Another question is, "To what do you ascribe the greatest cause for public disrespect for the lawyers?"

The entire legal profession suffers because of its small minority of ambulance chasers, blackmailers and all-round crooks. In some communities the ambulance chaser is looked on as a bird of evil omen, for he carries the first news of death or injury at the same time that he offers his services in a prospective suit for damages. When two or more of these gentlemen are seen boiling into a street in a hot foot race or breaking traffic regulations on bicycles or in automobiles, the supreme contempt with which they look on anything remotely resembling a fee becomes manifest. Their ability to secure advance information speaks volumes for the system employed. Failure to use an aeroplane, thereby cutting off additional precious seconds, can only be ascribed to inability to qualify for a pilot's license.

The browbeating and blackguarding of men and women on the witness stand is the exclusive privilege of the legal profession. As "officers of the court" they are safe in a line of conduct which, if followed on the street, would quickly develop its own antidote. Highway robbery can be carried out with a fair degree of good form, or it can be made vulgar and brutal by unnecessary blackjacking and brass knuckling of the victim. In court the "frisking" of a victim can be done in such a genteel manner that the "friskee" goes away feeling almost as pleased as if he had been the lion at some social function. On the other hand, he may be put through third degree methods that cause him to loathe and hate the whole legal profession. Claude Duval methods are preferred by the victim, who naturally dislikes being beaten to a pulp after having been separated not only from his coat, but from his cloak also.

The careful exclusion of testimony on technical grounds, testimony which appeals to the average layman as furnishing the key to the entire situation, breeds a feeling of contempt for court proceedings. Rational human beings, bound and helpless slaves in the grip of precedent, fail to arouse any enthusiasm on the part of the average man over the proposition that they represent the only exact science.

The failure of the presiding judge to protect a witness from vulgar abuse and vilification causes him to have scant respect for a court that emerges from a trial dripping with the filth of the streets, alleys, gutters and sewers through which it has been dragged by an unscrupulous attorney.

* Inaugural address, read before the Cincinnati Academy of Medicine, Jan. 15, 1916.

A third question concerns the faith placed in expert testimony by judges and jurymen. As a rule the judge is well educated and has had a wide experience; the combination enables him to place a fair valuation on the testimony. On the other hand, the jurymen are the judges of the facts and the evidence. In order to be eligible to serve on a jury, they must at the same time practically establish eligibility for admission to a home for the feebleminded. The "easy, extemporaneous liar," one whose fabrications have that rare quality, spontaneity, gets their vote.

"Which American professional household needs cleaning the worst, law or medicine?"

Both would be benefited by a thorough course of dry cleaning. Extremists have the impression that doctors and lawyers are bad men, that all bad men are either doctors or lawyers, and that a clean-up of undesirables in both professions would leave society clean and pure and wholesome. This assumption is an error. Business has its pirates; a clergyman is occasionally found deviating from the straight and narrow path; bankers have been known to default; the honest farmer is sometimes found to be a past master in the gold brick industry, and once in a long time—say once in 200 years—the newspaper profession furnishes a 100 per cent. candidate for first honors at a necktie party.

Both professions are at fault. The unscrupulous attorney needs false testimony to make a case; the unscrupulous doctor has it for sale. They enter into an unholy alliance to "bleed the victim white." It is a parallel case with the Adam and Eve scandal in which Eve plays the part of an attorney. (Or would it be fairer to Eve to make the serpent the attorney in that case?) At any rate, the demand for perjured testimony has its origin in the attorney, and the doctor furnishes the supply. The major portion of the responsibility certainly should be charged to the legal profession, because its members are "officers of the court." The court may be compared to the nest, the attorneys, the birds inhabiting it; "it's a dirty bird that fouls its nest."

Medicine and law are great professions. No more elevating spectacle can be conceived than an attorney fighting injustice or a physician freely risking his life in a battle against deadly epidemics. Both professions have made enormous contributions to the progress and happiness of the world. Both of them contain a majority of good men and a minority of bad ones. When the bad men in both begin to hunt in pairs, the good ones suffer in the public esteem. The good men in both professions have high standards of ethics, but they are subjected to unfair competition by men who regard subscribing to any standard of ethics as an evidence of weakness. The majority of both professions are tainted by enforced association with the small minority.

Can anything be done to relieve the conditions which, many people believe, make possible the purchase of perjured testimony?

Both professions have shown a disposition to clean house. Spasmodic attempts, resembling attacks of petit mal, have been made in the past without anything in particular being accomplished. Is it not possible for the overwhelming majority of both professions to transform the spasmodic attempts at reform, resembling petit mal, into attacks of grand mal or, if necessary into one of status epilepticus until reform has actually been accomplished?

Any attempt at reform will arouse violent opposition, for the guilty members of all professions will offer strenuous objections to being separated from their meal tickets. Vivid word pictures of an outraged constitution and Liberty dying in the midst of the most horrible agony will freight the atmosphere, while the flag will be pictured with all of its stars shot away. To this may be added the deep damnation implied when any attempt at reform is denounced as "un-American."

The selection of experts by the presiding judge, their fees to be assessed as a part of the court costs, would place the responsibility of selecting honest experts on the presiding judge. This plan would destroy the market place in which perjured testimony is for sale, permit the honest expert witness to come into his own, and wipe out the intellectual red light district established by unscrupulous members of both professions. Experts would become in fact, as well as in theory, advisors of the court, hired to clarify, not to confuse, issues. Court machinery would cease to be clogged by cases that many believe to be pure blackmail. Justice could discard the bandage now blinding her eyes and look on court proceedings unashamed.

It is suggested that medical societies over the country formally declare their attitude toward this problem by inviting the bar associations to cooperate with them in an effort to bring about changes in the rules governing the admission of expert testimony, which will eliminate, or at least reduce to a minimum, the temptation to sell corrupt expert testimony of any kind.

A BROAD CONCEPTION OF THE DIAGNOSTIC CLINIC

ROBERT POLLOCK, M.D.
SAN DIEGO, CALIF.

Entrusted with the publicity of the San Diego Diagnostic Group Clinic, which has just opened its doors, I had formulated a brief item for the news columns of THE JOURNAL, when it occured to me that the San Diego enterprise possesses enough elements that are still untried to merit its being termed an original movement, and as such it will be of interest to many readers of THE JOURNAL. The features that are distinctly new may be briefly summarized thus: It is conducted with hospital facilities sufficient to complete diagnoses and yet with no hospital in which to carry on treatment. It does no charity work, nor does it cater to the man of means. It gives opportunity to every specialist, in the broadest sense of the word, in the community to express himself through its service. It discloses a profession willing to serve freely without pay a class of patients who are in no sense charity patients.

This clinic, which was opened to the public, Saturday, Feb. 17, 1917, is the initial expression of an earnest desire on the part of a local philanthropist to help the man of modest income ($100 per month or less). Mr. E. W. Scripps, the owner of valuable newspaper properties in San Diego and many other American cities, proposes to have this class furnished with careful group diagnosis, at a price within the means of the working man, Mr. Scripps paying all necessary deficits. To do this he has furnished and equipped a substantial building in an easily accessible residence neighborhood, and placed it through a board of five trustees, at the disposal of the local medical profession to plan and work out the details of a diagnostic clinic. The medical men representing the various special lines of work met and entrusted the working out of the details to an executive committee of five of their number. The staff as at present constituted consists of fifty physicians divided among the seventeen special lines of diagnosis recognized, one from each specialty acting at a time and together constituting the diagnostic group serving a month at a time.

Patients are accepted for diagnosis only and must be referred by a registered physician, to whom, after a diagnosis is completed, the patient is referred back. The referring physician is invited to be present at the discussion of his patient's case, and is furnished with the diagnosis and general suggestions for treatment. The referring physician is protected by rules which prohibit any member of the diagnostic staff accepting patients who have been examined by it within ninety days, unless requested to do so by the patient's physician.

The patient is received at the clinic by the nurse-superintendent, his history is taken by a member of the staff, and he is then put to bed and the various specialists on duty called to examine him. It is figured that from two to three days will be required to make a complete examination and discuss the findings in the average case. Each day at noon the group on service lunch at the clinic and discuss their findings, arriving at a consensus of opinion without being handicapped by the ethics of ordinary consultation, the presence of the family of the patient, or any excess courtesy

to diagnoses already made. It is a threshing out of the truth as the members of the group see it and the reaching of diagnosis by weighing the various clinical data presented.

San Diego is a city of from 90,000 to 100,000 people, besides a considerable floating population. It is blessed with an ideal climate which draws people from every quarter of the country, and many of these present intricate problems for the diagnostician. The county medical society contains 125 of the total number of registered physicians. From this society have been selected the representative men of each specialty, recognition being given to all who care to serve. A little study of the division of work will suggest that few patients require the services of all members of the group to complete a diagnosis, and yet each is requested at least to consider the history of every case. A few statements are in order in answer to the question, often raised, why medical specialists should serve without pay on a diagnostic clinic to which all patients are asked to pay.

1. The fees are so modest that for a time the relation between receipts and overhead expense is difficult to determine.

2. The patients represent families with a total monthly income not exceeding $100. No others are received.

3. By cutting down the amount paid out for consultations and laboratory work, the patient will be enabled to pay his attending physician more nearly his proper fees.

4. Meanwhile it is not difficult to see that the staff should gain in many ways, through the broadening influence on its members of such scrutiny and comparison of one another's work.

5. Eventually, if the experiment proves a success, the clinic will probably be opened to all social classes.

A list of the charges, as at present arranged, is here appended.

FEES

Members of families having a total monthly income of $90 to $100	$25
Members of families having a total monthly income of 80 to 90	20
Members of families having a total monthly income of 70 to 80	15
Members of families having a total income under $70	10
Single patients with monthly incomes of from $70 to $80	25
Single patients with monthly incomes of from 60 to 70	20
Single patients with monthly incomes under $60	15

We have here a diagnostic clinic, affiliated in no way with any of the local hospitals. It is served, broadly speaking, by the specialists drawn from the ranks of the county medical society, although not necessarily restricted to them. It aims to give opportunity for service to any qualified specialist so desiring. It accepts as patients only those of modest means, neither the rich nor the very poor being received. Its staff, for the present at least, serves without pay.

1000 Watts Building.

Society Proceedings

COMING MEETINGS

Alabama State Medical Association, Montgomery, April 17-20.
Am. Assn. of Pathologists and Bacteriologists, New York, April 6-7.
American Gastro-Enterological Assn., Atlantic City, April 30-May 1.
American Urological Association, Chicago, April 2-4.
Arizona Medical Association, Douglas, April 17-18.
Arkansas Medical Society, Little Rock, May 1-3.
Association of American Physicians, Atlantic City, May 2-3.
California State Medical Society, San Diego, April 17-19.
Georgia Medical Association, Augusta, April 18-20.
Illinois State Medical Society, Bloomington, May 8-10.
Iowa State Medical Society, Des Moines, May 9-11.
Kansas Medical Society, Salina, May 2-4.
Louisiana State Medical Society, Alexandria, April 17-19.
Maryland Medical and Chirurgical Faculty, Baltimore, April 24-26.
Mississippi State Medical Association, Jackson, May 8-9.
Missouri State Medical Association, Springfield, May 14-16.
Nat. Assn. for Study and Prev. of Tuberculosis, Cincinnati, May 9-11.
Nebraska State Medical Association, Lincoln, May 8-10.
New Hampshire Medical Society, Concord, May 16.
New York State Medical Society, Utica, April 24-26.
North Carolina State Medical Society, Asheville, April 17.
Ohio State Medical Association, Springfield, May 14-16.
Oklahoma State Medical Assn., Lawton-Medicine Park, May 8-10.
South Carolina Medical Association, Spartanburg, April 17-19.
Tennessee State Medical Association, Nashville, April 3-5.
Texas State Medical Association, Dallas, May 8-10.

Medicolegal

Difference Between Actions on Contract for Professional and Other Services

(Sturgeon vs. Pioneer Life Ins. Co. (Mo.), 186 S. W. R. 1192)

The Kansas City Court of Appeals reverses a judgment obtained by the plaintiff, a physician who sued to recover damages for breach of an alleged contract of employment, because, while he alleged that he was employed by the defendant as its medical examiner, he was permitted, without amending his petition, to prove and recover on a different cause of action, namely, that he was employed, not as a medical examiner, but as a medical director, the duties of which latter office were purely executive and did not include the performance of professional services, so that it was not necessary that the incumbent should be a licensed physician, in Missouri, to which state the plaintiff had come from another to take the position. The court says that it was not necessary for it to decide in this case whether a Missouri life insurance company may lawfully employ a layman to perform the duties of medical director. It was enough here that, confronted with the charge of breaching a contract for professional services, the defendant could not properly interpose a plea of mitigation of damages, but such a plea would have been a defense to the action in the form of one for nonprofessional services, which plea, under the circumstances, the defendant was not allowed to make. An action on a contract for professional services differs from one on a contract for nonprofessional services, especially in rules pertaining to the measure of damages. If, as the plaintiff insisted, and as his proof tended to show, he was hired, not as a physician, but to perform the functions of an executive officer of an insurance company, the trial court erred in instructing the jury that his recovery could not be diminished by his earnings in other employments; but if he was hired, as he alleged in his petition, to render professional services, he could invoke the rule, followed in the instructions, that "there can be no mitigation where the plaintiff is a professional man and is to be paid a fixed price for certain work."

Student Practice Provision Versus Students of Osteopathy — "Eyelet Dilation"

(State vs. Collins (Ia.), 159 N. W. R. 604)

The Supreme Court of Iowa affirms a judgment of conviction of the defendant of practicing osteopathy without first having obtained and filed with the county recorder a certificate of the state board of medical examiners authorizing him to practice. The court says that it agrees with the defendant that statutes regulating the practice of medicine, and providing penalties for failure to comply with conditions imposed on such practice, include all who practice the art of healing, whatever the therapeutic agency employed, and that, therefore, one practicing osteopathy is, at least for the purposes of such statutes, practicing medicine. The court also agrees, for the sake of the argument, with the contention that statutes for the purpose of enforcing conditions on the right to practice medicine are held by a number of Iowa cases cited to include almost any profession to heal, or action for the purpose of healing. But there was an attempt to present a point which it might be conceded that mentioned cases from different jurisdictions have not dealt with. The argument was this: Practicing osteopathy is practicing medicine. Section 2579, Iowa Code of 1897, exempts from the penalties of the statute on which the indictment in this case rested "students of medicine" who have stated qualifications (which the defendant had), if they prescribe "under the supervision of preceptors," or give gratuitous services "in case of emergency." It was said that if the defendant was denied this exemption, there was an arbitrary and, therefore, void discrimination between osteopaths whom the law regards as practicing medicine, and others who are also practicing medicine. Axiomatic law refutes this contention. Courts avoid invalidating statutes unless the question whether they are valid arises for, and demands, decision. In the instant case the defendant

insisted throughout that the treatments given by him were not an application of the science of osteopathy, but were the application of a distinct system which he called "eyelet dilation." The statute exempts neither students nor practitioners of "eyelet dilation," and none but "students of medicine, surgery or obstetrics," and there was no claim that said dilation was either of these three. It will be time enough for the court to pass on whether a statute unduly discriminates against practitioners of osteopathy when some one presents the point who does not deny that he practices osteopathy. Again, while the defendant may have given gratuitous treatments, it did not appear that they involved a "case of emergency." And if that be passed, it was still undisputed that he gave many treatments in consideration of $2 per treatment. Finally, he was not a student at all, but a practitioner. If, for the sake of argument, he be treated as a student, the evidence showed clearly that he was not "a student, . . . prescribing under the supervision of a preceptor," although certain evidence presented the relation of consultants on occasion and occasional advice and direction. It was true that the defendant testified he claimed osteopaths would not treat a certain patient as the evidence showed he had treated her; that he claimed osteopaths did not use a pressure on the nerves to cure disease; that he was using "eyelet dilation" and not osteopathy; that his system termed "eyelet dilation" was entirely separate and distinct from "orthodox osteopathy." But the jury had before it what the defendant's treatments in fact were, and could find from that description alone that, though the treatments may not have been "orthodox osteopathy," yet it was an application of osteopathic science. The defendant himself described osteopathic treatment to be the doing of things which the evidence showed his treatments consisted of, and that both his treatments and osteopathy aimed to induce a flow of blood to the affected part. The court thinks that, while the jury might have found that the treatments were not osteopathic, it cannot disturb the findings of the jury that they were an application of the science of osteopathy.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March XIII, No. 3

1 *Acidosis in Children, with Reference to Pathologic Anatomy. E. Lackner and H. Gauss, Chicago.—p. 209.
2 *Acidosis with Severe Diarrhea. O. M. Schloss and R. E. Stetson, New York.—p. 218.
3 *Familial Icterus of Newborn Infants. I. A. Abt, Chicago.—p. 231.
4 *Calcium Metabolism in Case of Hemophilia. C. H. Laws and D. M. Cowie, Ann Arbor, Mich.—p. 236.
5 Cerebrospinal Fluid in Poliomyelitis. P. C. Jeans and M. R. Johnston, St. Louis.—p. 239.
6 *Schick Test in Poliomyelitis, Scarlet Fever, Measles and in Normal Children. A. Zingher, New York.—p. 247.
7 Case of Diaphragmatic Hernia in an Infant. T. C. McCleave, Oakland, Calif.—p. 252.
8 Résumé of Work on Tuberculosis in Children for 1916. M. Michael, Chicago.—p. 256.

1. **Acidosis in Children.**—Lackner and Gauss record the clinical course and necropsy in a case which they believe to be one of acidosis, and an attempt is made to correlate the anatomic alterations with the clinical diagnosis. The anatomic diagnosis was: Lipemia; lipuria; anasarca; marked fatty changes in the liver; marked fatty degeneration of the kidneys; cloudy swelling of the myocardium; passive congestion of the lungs and small accessory spleen. The authors conclude as follows: There occurs in acidosis, lipemia from the failure of the body tissues to utilize the fats in the blood. Lipuria, an outward expression of lipemia, also resulting from the excretion of fat in the waste products of the kidneys as fatty casts. Fatty infiltration of the liver, which is a physiologic accumulation of fat from the blood. Fatty degeneration of the kidneys resulting from acid intoxication. Anasarca resulting from impaired internal and external respiration.

2. **Acidosis with Diarrhea.**—Investigations were made by Schloss and Stetson on more than 200 infants. These consisted in the determination of the carbon dioxid in the blood, the carbon dioxid in the alveolar air, the carbon dioxid combining power of blood plasma, the tolerance to sodium bicarbonate, the presence of acetone bodies in the urine and the ammonia coefficient of the urine. Infants suffering from severe diarrhea with toxic symptoms often show the following signs of acidosis: 1, decrease of the carbon dioxid of the blood and alveolar air; 2, decreased carbon dioxid combining power of the blood plasma; 3, high ammonia coefficient in the urine; 4, increased tolerance to sodium bicarbonate; 5, improvement of the symptoms after administration of sodium bicarbonate. These signs are evident in some cases of diarrhea before the typical symptoms of intoxication have developed, and serve as a warning and therapeutic indication. If an infant suffering from severe diarrhea has hyperpnea, the diagnosis of acidosis is almost certain. If hyperpnea is not observed the diagnosis of acidosis must rest on laboratory evidence. Thorough and carefully controlled treatment by sodium bicarbonate usually causes disappearance of the acidosis, but despite this, the infants frequently die from a severe form of malnutrition.

3. **Familial Icterus in Infants.**—Abt relates the occurrence of a rare disease in new-born children, characterized by progressive icterus occurring in successive pregnancies and of unknown origin. The disease nearly always terminates fatally, though one of his patients recovered after a most serious attack and with the most alarming symptoms.

4. **Calcium Metabolism in Case of Hemophilia.**—The calcium content of the blood in the case of hemophilia studied by Laws and Cowie is the same as that obtained under normal conditions. The calcium content of the blood increased perceptibly during the calcium feeding period. The coagulation time of the blood was lengthened during the calcium feeding period. The calcium content of the food (milk) was slightly greater in their series than in the usually reported analyses.

6. **Schick Test in Normal Children.**—Zingher holds that the Schick test is positive between 1 and 4 years of age in about 32 per cent. of normal children, in a slightly larger proportion of cases of measles, in twice as many cases of scarlet fever and nearly three times as many cases of poliomyelitis. Susceptibility to one of the less contagious diseases, like poliomyelitis, indicates that the child is more apt to be susceptible to other contagious and infectious diseases. Natural immunity reveals interesting problems, which can be partly solved by a study with the Schick test in diphtheria immunity. A uniform technic of making the test, standard solutions of toxin, a uniform interpretation of the test, and a large series of cases are essential in any attempt at making important deductions from the results obtained with the Schick reaction.

American Journal of Medical Sciences, Philadelphia

March, CLIII, No. 3

9 *Rôle of Fat in Diabetes. F. M. Allen, New York.—p. 313.
10 *Endothelioma of Right Bronchus Removed by Peroral Bronchoscopy. C. Jackson, Pittsburgh.—p. 371.
11 *Spelter Chills. D. Riesman and R. S. Boles, Philadelphia.—p. 376.
12 Unilateral Renal Hypoplasia and Dysplasia Due to Defective Arteriogenesis; Relation to So-Called Hypogenetic Nephritis. W. M. L. Coplin, Philadelphia.—p. 381.
13 *Rarity of Conjugal Phthisis. M. Fishberg, New York.—p. 395.
14 *Status of Diphtheroids with Special Reference to Hodgkin's Disease. W. F. Cunningham, New York.—p. 406.
15 Some Physiologic Effects of Various Atmospheric Conditions. J. A. Miller, New York.—p. 412.
16 Case of Extreme Acidosis Occurring in Man with Bilateral Cystic Kidneys. J. H. Means and O. F. Rogers, Jr., Boston.—p. 420.
17 Invasive Quality of Streptococci in Living Animal. W. L. Holman, Pittsburgh.—p. 427.

9. **Rôle of Fat in Diabetes.**—The most important fact shown by Allen's experiments is that the appearance of spontaneous downward progress observed in human patients can be exactly imitated in dogs. It is possible that further factors, notably occasional infections, may be operative in at least some human cases. It is not positive that the undernourished dogs will be able to live indefinitely, but it is conclusively demonstrated that the attempt at high nutrition, even with fat, produces in these dogs an appearance of spontaneous aggravation of conditions as striking as anything witnessed in human

patients, and that this result can be prevented at least for periods of years by limiting the total caloric intake and the body mass to correspond to the assimilative function. The experience with diabetic dogs warns unmistakably against efforts to maintain patients on a luxus level of diet or weight. The standard should approach that of Chittenden rather than that of Voit. Restriction of single foods, as carbohydrate or protein, suppresses symptoms temporarily, but lightening the total load on the weakened assimilative function is the only present means by which it may be hoped actually to halt the diabetic process.

10. **Endothelioma of Bronchus.**—Jackson claims that diagnostic bronchoscopy is indicated in cases of monolateral "asthma," bronchitis, bronchial obstruction, and in cases of tuberculosis in which persistent search fails to show tubercle bacilli. His case proved to be one of endobronchial tumor. The tumor was removed under local anesthesia. Jackson says that this is the only recorded case of apparent cure of an endothelial endobronchial tumor by peroral bronchoscopy, and only the second endoscopic removal of any form of malignant growth from a bronchus.

11. **Spelter Chills.**—"Spelter chills" is the name given by Riesman and Boles to a condition heretofore described under such varying terms as brass-founders' ague, brass chills, zinc chills, smelter shakes, "Giesfieber" or "Staubfieber," and "fièvre des fondeurs." The authors believe the condition results from the inhalation and ingestion of the fumes and flakes of zinc oxid arising from the melting and volatilizing of spelter, which is the commercial name for zinc in its impure state. The first thing complained of is a creepy, chilly sensation up and down the spine which gradually extends throughout the entire body. It may continue as a mere chilliness, but more often develops into a genuine rigor which lasts for from one-half hour to an hour or even from two to three hours. At its height, cramps and pains in the limbs are apt to occur; abdominal pain is infrequent, except as it may follow the ingestion of cold drinks. The pulse is increased in frequency and there is a slight elevation of temperature. Preceding the chill there is a dry, scratchy sensation in the throat, a sticking, pricking feeling in the tongue, oppression in the chest, and an irritating cough, usually unproductive. Actual dyspnea is rare. There is a feeling of prostration and of nausea which frequently eventuates in severe vomiting. Diarrhea is common. As the attack subsides the patient, quite exhausted, breaks out into copious perspiration and soon falls into a deep sleep. A temporary loathing for food and an unpleasant metallic taste in the mouth are present on awakening and last a little while. The attacks do not often incapacitate the workers. The authors discuss this condition fully.

13. **Rarity of Conjugal Phthisis.**—In an examination of 170 married couples in which one of the consorts was tuberculous, and who lived under conditions favoring transmission of the disease, in poverty and want and under deleterious hygienic and sanitary surroundings, Fishberg found only five, or 2.9 per cent., in which both the husband and wife were affected with the disease.

14. **Diphtheroids and Hodgkin's Disease.**—Tuberculous glands, glands from cases of subleukemic lymphadenosis, Hodgkin's disease, a supraclavicular gland from a case of large round cell sarcoma, and primary mediastinal glands were examined by Cunningham and organisms were found which, he says, may be placed in the diphtheroid group, and only on morphologic grounds was he able to say that many of them are of different strains. The organisms which were isolated from glands of Hodgkin's disease, however, are very similar if not identical with those from the tuberculous glands. In some instances the diphtheroids were primarily associated with cocci which later overgrew them. Cunningham points out that it is reasonable to suppose that glands draining such places as the mouth, throat and tonsils should harbor such organisms as are commonly found in these portals. With the evidence at hand, however, the occurrence of them in the laboratory, in blood cultures (appearing rather late), in the heart's blood at the morgue, in ascitic fluid, and in a series of gland cultures of questionable technic, and not in a series where technic is definitely controlled, leads him to believe that we are dealing with organisms whose natural habitat is the laboratory. He does not believe that the organism heretofore described by various other workers bears any relation to the cause of Hodgkin's disease.

Archives of Pediatrics, New York

February, XXXIV, No. 2

18 *Coagulation of Cow's Milk in Human Stomach. J. Brennemann, Chicago.—p. 81.
19 *Immediate Tonsillectomy in Incipient Acute Endocarditis of Tonsillar Origin. E. C. Fleischner, San Francisco.—p. 118.
20 Elucidation of Some Arrhythmias of Heart in Children by Means of Electrocardiograph. R. H. Halsey, New York.—p. 128.
21 Transmission of Bovine Tuberculosis to Human Beings. M. P. Ravenel, Columbia, Mo.—p. 137.
22 Scarlet Fever and Measles Occurring Simultaneously in Same Individual, Other Children of Family Acquiring Measles Only. D. J. M. Miller, Atlantic City, N. J.—p. 139.
23 History of Pediatrics in New York. A. Jacobi, New York.—p. 144.

18. **Coagulation of Cow's Milk in Stomach.**—Seventy-four experiments are reported in detail by Brennemann. He found that cow's milk coagulates in the human stomach within a few minutes. The small curds formed at first, increase in size, for about two hours, by coalescing with their neighbors, after which they decrease because of the peripheral digestive action of the gastric juice, but are still present after five hours. The curds of raw milk are very large and hard, and those of boiled milk small and soft; those of pasteurized milk between these, but almost like those of raw milk; that is, raw milk is a very solid food—boiled milk a semiliquid food. The less the fat in the milk the harder and larger the curd, the more the fat, the smaller and softer the curd. The greater the amount of fat the longer the stay in the stomach, and the slower the digestion. Milk taken very slowly forms a larger curd than when taken rapidly. The greater the dilution with water the finer, flakier and more porous the curd. Alkalies and sodium salts very greatly inhibit coagulation—even stop it completely if in sufficient amounts. Precoagulated milk, such as buttermilk, pegnin milk or eiweissmilch, show very little tendency to recoagulation. Dried and condensed milks, as a rule, form a minimum curd. Starchy decoctions, such as barley water, have a very decided influence in lessening the size of the curd; much more so than simple watery dilution. Soluble carbohydrates, such as dextrins and sugars (milk, cane and malt) have apparently no appreciable influence on the curd.

19. **Immediate Tonsillectomy in Acute Endocarditis.**—Cases of acute endocarditis occurring in children in whom there has previously been no cardiac disease are reported by Fleischner. The type of acute endocardial inflammation to which special attention is called is that in which the endocarditis develops in the course of an acute, or rather subacute, inflammation of the tonsils. A tonsillectomy was done in each case.

Boston Medical and Surgical Journal

March 1, CLXXVI, No. 9

24 Treatment of Pneumonia. E. A. Bates, Springfield.—p. 293.
25 Intestinal Toxemia and Sequelae. W. E. Preble, Boston.—p. 296.
26 Trench Foot. H. M. Frost, Boston.—p. 301.
27 Ileostomy for Ileus and General Peritonitis. J. W. Lane, Boston.—p. 304.
28 "Constitutional" vs. "Local" Signs and Symptoms in Diagnosis of Early Pulmonary Tuberculosis. J. B. Hawes, 2d, Boston.—p. 307.
29 Morphin-Atropin, Pituitary Extract and Ether in Obstetrics. J. F. Martin, Boston.—p. 310.
30 *Successful Use of Internal Splints in Septic Compound Fracture. P. H. Leavitt, Boston.—p. 311.

30. **Use of Internal Splints in Septic Compound Fracture.**—A case is reported by Leavitt in order to register the successful use of a bone plate in a septic compound fracture of the lower leg, the value of constant irrigation, and the subsequent use of direct sunlight. The patient sustained a compound fracture of the tibia at about its middle, a fractured fibula and fractured astragalus. The fracture was treated conservatively; that is, the skin cleaned and the edges of the wound cauterized. One cubic centimeter of 2 per cent. iodin was injected into the wound, and pillow and side splints applied.

Sepsis occurred, since the fracture was transverse and muscle pull made it impossible to hold the ends in apposition. Since after open reduction a complete plaster, even if bivalved, would not allow a careful dressing of the now septic fracture, with the large area of denuded skin, it was decided that a bone plate would be the best means of approximating the ends. A bone plate was applied and screw holes were drilled diagonally down to the point of fracture in order to insure drainage of the septic material between the approximated edges of the bone. At the end of twenty-seven days from application, the plate became loosened on account of sepsis in the screw holes; it was removed and a Parham band applied. There was at this time, about 2 by 1 inches of tibia exposed, and 3 by 4 inches of surrounding muscle. Exposure to direct sunlight was then started and kept up for six weeks. Nine weeks after operation a large sequestrum was removed, and the skin area healed over more rapidly without the aid of grafts.

Bulletin of Johns Hopkins Hospital, Baltimore

March, XXVIII, No. 313

31 *Transfusion of Blood: History, Methods, Dangers, Preliminary Tests, Present Status. R. D. McClure, Detroit, and G. R. Dunn, Baltimore.—p. 99.
32 *Aleukocythemic Leukemia. Acute Myeloblastic Leukemia. Chloroma (?). Chronic Lymphatic Leukemia. J. T. King, Jr., Baltimore.—p. 114.
33 *Possibility of Developing an Experimental Chemotherapy of Tuberculosis. P. A. Lewis, Philadelphia.—p. 120.

31. **Transfusion of Blood.**—One hundred and fifty transfusions have been performed by McClure and Dunn. These included the following cases: pernicious anemia, 17 cases; secondary anemia, 19 cases; hemophilia and shock, each 2 cases; hemorrhage, 6 cases; leukemia, 5 cases, and 39 other cases, such as intoxications, septicemia, dysentery, typhoid, other infections, purpura hemorrhagica, benzol poisoning and tumors (carcinoma). A severe reaction occurred in 20 cases; a slight reaction, in 25 cases; a chill in 15 cases; temperature over 101 F. in 34 cases; hemolysis in 8 cases. Results: life saving, 15 cases; beneficial, 63 cases; no benefit, 56 cases and harmful, 16 cases. One death was due to the transfusion as an immediate cause, owing to the improper matching of the blood.

32. **Aleukocythemic Leukemia.**—Three cases of leukemia of the aleukocythemic variety are reported on by King. In one of them, an acute myeloblastic leukemia, so far as is known these was never a real leukocytosis; in the second, a case of chloroma, there was a history of a leukocytosis, but none was found in counts made several months apart; and in the third case, one of chronic aleukocythemic lymphatic leukemia, there was no leukocytosis prior to the terminal stage. In this case there was a high mononuclear percentage. The blood picture was changed, however, from that of an aleukocythemic, to that of a typical lymphatic, leukemia during an acute bronchitis and an acute bacillary dysentery.

33. **Possibility of Developing an Experimental Chemotherapy of Tuberculosis.**—Following the observation that the tuberculous tissue in the living animal was easily penetrated by trypan red, many other dyes of the same general class, chemically speaking, were tested by Lewis for their reaction in this particular. A considerable number were found which could become concentrated in the diseased tissue to a greater or less extent. Many of these had never been accurately described from a chemical point of view; others presented difficulties in manufacture. After much consideration, a dye known to the trade as Niagara blue 2B (benzidin plus 2 H. Acid) was chosen as the starting point of a second attempt to construct a series of iodin and phenol compounds. The disinfectant action of various substances for the tubercle bacillus has also been studied. The procedure by which the results reported were obtained was to determine the least concentration of the substance in glycerin bouillon which would definitely inhibit the growth of the tubercle bacillus. For comparison, the typhoid bacillus was used. It was found that the typhoid bacillus is much more resistant than the tubercle bacillus; in other words, the susceptibility of the latter is greater.

The results were as follows: Phenol: Typhoid 1/800 (concentration) = tubercle bacillus 1/2,000, or the susceptibility of the tubercle bacillus = 2½. Resorcin: Typhoid 1/4,000 = tubercle bacillus 1/100,000 or susceptibility of tubercle bacillus = 25. Benzidin and Resorcin combination: Typhoid 1/400 = tubercle bacillus 1/100,000 or susceptibility of tubercle bacillus = 250. Acridin orange: Typhoid 1/4,000 = tubercle bacillus 1/400,000 or susceptibility of tubercle bacillus = 100. Heliotrope: Typhoid 1/1,000 = tubercle bacillus 1/400,000 or susceptibility of tubercle bacillus = 400. Of the anilin dyes, specific activity is manifested quite generally by those related to safranin and to acridin, and in greater or less degree by many of the azo-dyes made with benzidin as the basic constituent. On the whole, the number of substances showing this property is large rather than small. Although in the studies previously made with other bacteria, the concentration required to inhibit the growth of the culture is roughly proportional to the higher concentration required to kill the microorganism in a short period of time, with the tubercle bacillus this is not the case. So far no substance has been discovered by which the tubercle bacillus is killed more readily than is the typhoid bacillus. The ability to inhibit the growth of the tubercle bacillus in cultures is not dependent on high disinfectant activity in general. It is an attribute of a number of substances which are relatively nontoxic for higher animals.

Journal-Lancet, Minneapolis

March 1, XXXVII, No. 5

34 Ureteral Stone; Report of Case. O. Owre, Minneapolis.—p. 129.
35 *Intracanalicular Papilloma of Breast. E. S. Judd, Rochester, Minn.—p. 141.
36 Dosage and Therapy in Tooth Extraction. F. B. Kremer, Minneapolis.—p. 144.
37 Treatment of Carcinoma of Uterus. T. Bratrud, Warren.—p. 146.

35. **Intracanalicular Papilloma of Breast.**—Among thirty-two cases of papillomas of the breast, Judd found the following pathologic classification: intracystic papillomas, 8; intracystic carcinomatous papillomas, 8; intracanalicular papillomas, 10; carcinomatous intracanalicular papillomas, 3; intraacinar papilloma, 1; intracanalicular papilloma associated with a carcinoma of the breast, 2. In this series, carcinoma was present in 11; in 3 other cases the pathologist believed the condition was carcinomatous, but he was unable to make a definite diagnosis. The characteristic symptom in these 32 cases was bleeding or a serohemorrhagic discharge from the nipple. In a few instances there were palpable tumors, but in all of these the growth was produced by chronic mastitis or by cystadenoma, and in no instance was there a papilloma in the duct large enough to be palpated, except in one case, in which it extruded from the nipple.

Journal of Experimental Medicine, Baltimore

March, XXV, No. 3

38 *Drug Fastness of Spirochetes to Arsenic, Mercurial and Iodid Compounds in Vitro. S. Akatsu and H. Noguchi, New York.—p. 349.
39 *Resistance of Spirochetes to Action of Hexamethylentetramin Derivatives and Mercurial and Arsenic Compounds. S. Akatsu, New York.—p. 363.
40 Influence of Carbohydrates on Cultivation of Spirochetes. S. Akatsu, New York.—p. 375.
41 *Absorption of Fat in Partially, and in Completely Depancreatized Dogs. C. W. McClure, B. Vincent and J. H. Pratt, Boston.—p. 381.
42 Some Field Experiments Bearing on Transmission of Blackhead in Turkeys. T. Smith, Princeton, N. J.—p. 405.
43 Coccidia in Sparrows and Their Assumed Relation to Blackhead in Turkeys. T. Smith and E. W. Smillie, Princeton, N. J.—p. 415.
44 *Intestinal Obstruction. Experimental Study of Intoxication in Closed Intestinal Loops. L. R. Dragstedt, J. J. Moorhead and F. W. Burcky, Chicago.—p. 421.
45 Influence of Certain Organic Substances on Growth of Tubercle Bacillus. P. A. Lewis, Philadelphia.—p. 441.
46 Proteose Intoxications and Injury of Body Protein. Metabolism of Fasting Dogs Following Proteose Injections. G. H. Whipple and J. V. Cooke, San Francisco.—p. 461.
47 Id. Metabolism of Dogs with Duodenal Obstruction and Isolated Loops of Intestine. G. H. Whipple, J. V. Cooke and T. Stearns, San Francisco.—p. 479.
48 *Effect of Cold on Malaria Parasites in Mosquito Host. W. V. King, New Orleans.—p. 495.

38. **Drug Fastness of Spirochetes.**—The authors attempted to determine whether or not, by subjecting several varieties of spirochetes to increasing doses of certain chemotherapeutic agents, a gradual increase of resistance to the latter could be shown. For this purpose, pure cultures of *Treponema pallidum*, *Treponema microdentium*, and *Spirochaeta refringens* were used against the action of salvarsan, neosalvarsan, bichlorid of mercury and iodin potassium iodid solution in vitro. *T. pallidum* and *T. microdentium* have, within three to four months, increased their tolerance to salvarsan and neosalvarsan to five and one-half times their original mark. With *S. refringens* the increase was about three times. Against the action of mercuric chlorid the amount of increased tolerance of *T. pallidum* was about 35 to 70 times the original, while that of *T. microdentium* was about ten times as much, and was reached within ten weeks. *S. refringens* resisted thirty times the original dose. There was an unmistakable increase of resistance of these spirochetes to the action of the iodin iodid solution (Lugol's solution) when they were grown for several generations in fluid medium containing the iodin solution, but the rate of increase between the initial and the acquired tolerance was slight. In general, the addition of Lugol's solution to fluid medium has a weak inhibitory influence on the growth of the spirochetes, requiring for the total suppression of growth a quantity of over 0.7 to 5 c.c. of the culture medium. The tolerance reached was for about three times that amount. A similar tolerance phenomenon has not been established when employing a solid instead of a fluid medium containing the drugs.

39. **Resistance of Spirochetes.**—The majority of the seventy-six new compounds tested by Akatsu possessed spirocheticidal powers ranging between 1:1,000 (30) to 1:2,500 (14), while only 2 attained the power of 1:5,000, 1 of 1:25,000, and 2 of 1:50,000. On the other hand, 8 killed the spirochetes in a dilution of 1:750, 10 in 1:500, 7 in 1:250, 1 in 1:100, and 1 in 1:50. Two with an activity of 1:50,000 and 1 of 1:25,000 were mercury compounds; mercuric chlorid kills the organisms in a dilution of 1:100,000 under the same experimental conditions. Phenol is spirocheticidal in a dilution of 1:2,500, 40 per cent. formaldehyd solution in 1:750, salvarsan in 1:7,500, and neosalvarsan in 1:2,500. Neither sodium nor potassium iodid displayed any marked spirocheticidal property (1:10 only), while iodin in the form of Lugol's solution was able to kill them at 1:75. Sodium cholate killed in 1:5,000, sodium glycocholate and taurocholate in 1:2,500 each, saponin in 1:7,500; sodium oleate in 1:7,000, and cobra lecithid and native cobra venom in a dilution of 1:1,000 each.

41. **Absorption of Fat in Depancreatized Dogs.**—It was found by the authors that dogs with a subcutaneous transplant secreting and discharging pancreatic juice externally absorbed no more fat than dogs in which the pancreatic remnant was undergoing rapid atrophy and sclerosis. Hence, the condition of the pancreatic tissue remaining in the body does not influence the amount of fat absorbed by the intestine. The absorption of fat by the intestinal mucous membrane is always markedly disturbed when the pancreatic secretion is excluded from the intestine. After the complete removal of all pancreatic tissue from an animal, the absorption of considerable amounts of fat can still take place.

44. **Intoxication in Closed Intestinal Loops.**—The authors' experiments showed that closed intestinal loops in which bacteria are first removed are compatible with life. Closed intestinal loops in which bacteria are present but in which tissue necrosis is prevented, are compatible with life. Closed aseptic intestinal loops in which the blood supply is completely occluded are compatible with life. The normal secretions and bacterial products of the duodenum and jejunum are not sufficiently toxic to produce any symptoms when allowed to drain into the abdominal cavity. The results do not support the theory of Draper of a normal toxic secretion of the duodenal mucosa, neutralized by the jejunal mucosa, or the perverted secretion theory of Whipple. Bacterial activity plus necrotic tissue, or the absorption of toxic products resulting from the action of putrefactive bacteria on necrotic tissue is the important factor in the rapid death in simple closed intestinal loops.

48. **Effect of Cold on Malaria Parasites.**—The experiments reported by King show that the parasite of tertian malaria in the mosquito host is able to survive exposure to a temperature of 30 F. for a period of two days, 31 F. for four days, and a mean temperature of 46 F. for seventeen days. In a smaller series of tests the sporonts of the estivo-autumnal parasite have shown a resistance to temperatures as low as 35 F. for twenty-four hours.

Journal of Parasitology, Urbana, Ill.

December, 1916, III, No. 2

49 *Effects of Radiation on Development of Trichinella Spiralis. E. F. Tyzzer and J. A. Honeij.—p. 43.
50 Nematodes from Fresh-Water Fishes. H. B. Ward and T. B. Magath, Urbana.—p. 57.
51 Polycystid Gregarines from Arthropoda. M. E. Watson.—p. 65.
52 Trematode Larva Encysted in Crab, Helice Tridens (De Haan). S. Yoshida.—p. 76.
53 Cytoleichus Penrosei, New Arachnoid Parasite Found in Diseased Lungs of Prairie Dog, Cynomys Ludovicianus. F. D. Weidman.—p. 82.

49. **Effects of Radiation on Development of Trichinella Spiralis.**—The results obtained by Tyzzer and Honeij fail to furnish an experimental basis for the treatment of schistosomiasis by radiation, so that if the latter is attempted it should be regarded as an experiment rather than an approved mode of procedure.

Kentucky Medical Journal, Bowling Green

March, XV, No. 3

54 Detection of Early Pulmonary Tuberculosis. E. Morris, Oak Forest, Ill.—p. 103.
55 Treatment of Tuberculosis. E. Morris, Oak Forest, Ill.—p. 109.
56 Specific Treatment of Tuberculosis. S. H. Von Ruck, Asheville, N. C.—p. 110.
57 *Indications for Cholecystostomy and Cholecystectomy. I. Abell, Louisville.—p. 114.
58 *What Can Internist Do For Infection of Bile Tract? W. A. Jenkins, Louisville.—p. 117.
59 Home Treatment and Cure of Opium and Morphin Addicts with Tabulated Report of Fifty-Two Cases. J. A. Snowden, Winchester.—p. 125.
60 Pruritus; Its Cause and Treatment. C. R. Lanahan, Louisville. —p. 131.

57 and 58. Abstracted in THE JOURNAL, Dec. 2, 1916, pp. 1693 and 1694.

Maine Medical Association Journal, Portland

February, VII, No. 7

61 Surgical Significance of Abdominal Contusions. F. H. Jackson, Houlton.—p. 209.
62 Asthma in Children. F. P. Webster, Portland.—p. 225.
63 Use of Duodenal Tube. R. F. Chase, Portland.—p. 230.

Medical Record, New York

March 3, XCI, No. 9

64 Hospital Social Service for Children. H. D. Chapin, New York. —p. 353.
65 Some Recent Work on Pancreas in Its Relation to Diabetes Mellitus. W. N. Berkeley, New York.—p. 355.
66 Compulsory Health Insurance. E. V. Delphey, New York.—p. 357.
67 Problem of Medical Care of Five Million Individuals. A. C. Burnham, New York.—p. 361.
68 Nonvenereal Infection of Prostate. G. K. Swinburne, New York. —p. 363.
69 Treatment of Asthma by Pituitary Extract and Epinephrin Injections. E. Zuehelin, Baltimore.—p. 364.
70 Approved Newer Methods of General Anesthesia. R. C. Coburn, New York.—p. 367.
71 Epithelioma of Nose Apparently Caused by Irritation from Tortoise Shell Spectacles. L. F. Herz, New York.—p. 370.

Michigan State Medical Society Journal, Grand Rapids

March, XVI, No. 3

72 Medical Library of University of Michigan and Its Value to Practitioners of Michigan. A. S. Warthin, Ann Arbor.—p. 89.
73 Mitral Stenosis, Aortic Stenosis, Aortitis, Angina Pectoris and Aortic Aneurysm. W. J. Wilson, Jr., Detroit.—p. 95.
74 Poliomyelitis. I. L. Polozker, Detroit.—p. 100.
75 Methods of Diagnosis in Abdominal Disease. J. B. Jackson, Kalamazoo.—p. 105.
76 Case of Postoperative Tetanus. H. S. Collisi, Grand Rapids.—p. 110.

77 Report of Two Cases of Von Recklinghausen's Disease (Neurofibromas). H. de B. Barss, Ann Arbor.—p. 113.
78 Case of Mycosis Fungoides. J. A. Elliott, Ann Arbor.—p. 117.
79 *Relation of Pernicious Anemia to Infection; Report of Case. L. H. Newburgh, Ann Arbor.—p. 118.
80 Case of Hydronephrosis Resulting in Carcinoma of Kidney Medulla. R. W. Kraft, Ann Arbor.—p. 120.

79. **Relation of Pernicious Anemia to Infection.**—The positive findings on physical examination in Newburgh's case were extreme pallor, lemon yellow color typical of pernicious anemia, a large spleen, a heart lesion, a blood picture which could not be distinguished from pernicious anemia, and fever. The fever, which gradually diminished, averaged 100 to 102 during the first week; during the second week it was a little lower; during the third week she had practically no fever. Two blood cultures were made and both were positive, probably a streptococcus.

Military Surgeon, Washington, D. C.

March, XL, No. 3

81 Influence of European War on Transmission of Infections of Disease. W. C. Rucker.—p. 245.
82 Combined Method (Fluoroscopy and Surgery) for Localization and Extraction of Projectiles. J. M. Flint, New Haven, Conn.—p. 259.
83 Secondary Sutures of Gunshot Wounds as Economic Factor in War Surgery. D. P. Penhallow, Paignton, England.—p. 274.
84 Saline Treatment of Infected Wounds on Western Front. W. A. Clark.—p. 278.
85 Occurrence of Endamebic Dysentery in Troops Serving in El Paso District from July, 1916, to December, 1916. C. F. Craig.—p. 286. To be continued.
86 Demography in so far as it Relates to Vital Statistics of Armies. W. P. Chamberlain.—p. 303.

Modern Hospital, St. Louis

March, VIII, No. 3

87 Philippine General Hospital, Manila. W. E. Musgrave, Manila.—p. 165.
88 How Much Coal Does a Patient Cost? R. C. Beadle, New York.—p. 172.
89 Tuberculosis Preventorium for Children, Farmingdale, N. J. J. P. Quimby, Farmingdale, N. J.—p. 177.
90 Experiment in Cooperative Care of Indigent Sick. W. B. Small, Waterloo, Iowa.—p. 180.
91 County Tuberculosis Sanatoriums in Minnesota. R. Bosworth, St. Paul, Minn.—p. 182.
92 Small Community Hospital—Interns, Nurses and Employees. J. A. Hornsby, Chicago.—p. 185.
93 Nopeming Hospital for Tuberculosis at Duluth, Minn. A. T. Laird, and W. L. Sullivan, Duluth, Minn.—p. 189.
94 Oleomargarine—Useful and Economical Substitute for Butter. J. P. Street, New Haven, Conn.—p. 195.

New Orleans Medical and Surgical Journal

March, LXIX, No. 9

95 Colonization of Epileptics. W. B. Terhune, Jackson.—p. 612.
96 Agglutination of Bacteria by Means of Dried and Dosed Serums, with Special Application to Diagnosis of Cholera. G. Marocco.—p. 617.
97 Removal of Varicose Veins of Leg with Local Anesthesia. C. W. Allen, New Orleans.—p. 621.
98 Apothesine, New Local Anesthetic. C. W. Allen, New Orleans.—p. 623.
99 Sprains. I. Cohn, New Orleans.—p. 627.
100 New French Aid in Correction of Deformed Feet. P. A. McIlhenny, New Orleans.—p. 633.
101 Removal of Foreign Body (Knife Blade) from Brain. H. B. Gessner, New Orleans.—p. 636.
102 System of Peripatetics. E. S. Goodhue, New Orleans.—p. 639.

New York Medical Journal

March 3, CV, No. 9

103 Destruction of Angiomas and Other New Growths by Injection of Quinin and Urea Hydrochlorid. W. W. Babcock, Philadelphia.—p. 385.
104 Carcinoma of Bladder. H. Lilienthal, New York.—p. 386.
105 Medical Department with Mobile Army. W. H. Steers, Brooklyn.—p. 388.
106 Report of One Year's Work in Tuberculosis. J. D. Gibson, Denver.—p. 396.
107 Method of Obtaining Duplicate Reconstructions from One Series of Wax Plates. F. D. Weidman, Philadelphia.—p. 400.
108 Restoration of Sight in Case of Hypermature Cataract of Twenty Years' Standing Complicated by Acute Glaucoma. M. Talmey, New York.—p. 401.
109 Research in Epilepsy. H. A. Knox, Bayonne, N. J.—p. 406.
110 Chorea Complicating Labor. K. B. Bretzfelder, New Haven, Conn.—p. 409.

Ohio State Medical Journal, Columbus

March, XIII, No. 3

111 Need of Greater Appreciation of Foods. T. H. Infield, Zanesville.—p. 149.
112 Maxillary Sinusitis, Diagnosis, Pathology and Treatment. W. O. Bonser, Toledo.—p. 151.
113 Adenomas of Mammary Gland. J. W. Means and J. Forman, Columbus.—p. 154.
114 Venice Turpentine in Treatment of Burns. H. F. Biggar, Cleveland.—p. 157.
115 Treatment of Simple Proctitis, Sigmoiditis and Colitis. W. Teachnor, Columbus.—p. 158.
116 Physiology of Pituitary. C. McPeek, Columbus.—p. 161.
117 Milk Supply as it Concerns Practicing Physician. F. G. Boudreau, Columbus.—p. 166.
118 Postmortem Cesarean Section; Report of Case. O. T. Sproull, West Union. 169.

Oklahoma State Medical Association Journal, Muskogee

March, X, No. 3

119 Inquiry into Medicolegal Status of Traumatic Neuroses. A. K. West, Oklahoma City.—p. 85.
120 Mortality Around Fifty Years. J. H. Florence, Houston, Texas.—p. 90.
121 New Operation for Canthoplasty with Special Technic in Cases Due to Trachoma. D. W. White and P. C. White, Tulsa.—p. 93.
122 Tumors of Long Bones. Case of Osteochondrofibroma of Femur. J. A. Brooke, Oklahoma City.—p. 100.
123 Treatment of Fractures of Femur. G. A. Kilpatrick, McAlester.—p. 104.
124 Anesthesia. J. T. Riley, El Reno.—p. 108.
125 Differential Diagnosis and Treatment of Diseases of Throat, Characterized by Formation of Pseudomembrane. M. C. McNew, Ada.—p. 144.

Ophthalmic Record, Chicago

March, XXVI, No. 3

126 Coloboma of Iris in Association with Congenital Cataract. G. O. Ring, Philadelphia.—p. 113.
127 Eskimo Snow Blindness and Goggles. J. Daland, Philadelphia.—p. 116.
128 Ocular Disturbances Due to Malaria and Quinin. J. S. Fernandez, Havana, Cuba.—p. 118.
129 Cornea and Retina of Eye. O. Haab, Switzerland.—p. 124.
130 New Operation for Canthoplasty with Special Technic in Cases Due to Trachoma. D. W. White and P. C. White, Tulsa, Okla.—p. 132.
131 Making Ophthalmometer More Helpful. S. Mitchell, Hornell, N. Y.—p. 143.
132 Spontaneous Rupture of Cornea and Delivery of Lens in Glaucomatous Eye. J. H. Andrew, Brooklyn.—p. 144.
133 Local Anesthetizers. E. E. Maddox, Bournemouth, England.—p. 145.
134 Some Experiences with Colored Lenses Under Subtropical Conditions. F. J. Walter, Daytona, Fla.—p. 146.

Rhode Island Medical Journal, Providence

March, I, No. 3

135 Study of Empyema or Pyothorax. J. W. Keefe, Providence.—p. 57.
136 Hookworm Disease in Rhode Island. A. M. Burgess and P. D. Meader, Providence.—p. 61.
137 Gynecology as Specialty. W. G. Sullivan, Providence.—p. 65.
138 Case of Tuberculous Meningitis. H. S. Bernstein, Providence.—p. 68.

West Virginia Medical Journal, Huntington

January, XI, No. 7

139 Ectopic Gestation with Special Reference to Treatment. X. O. Werder, Pittsburgh.—p. 233.
140 Hospital and Physician. P. O. Clark, Wheeling.—p. 238.
141 Work of Division of Sanitary Engineering of West Virginia State Department of Health. M. Tolman, Charleston.—p. 244.
142 Why West Virginia Needs Model Law for Collecting Vital Statistics. H. B. Wood, Charleston.—p. 247.
143 Clinical Notes—Chicago Clinics, November, 1916. J. E. Cannaday, Charleston.—p. 248.
144 Toxicity of Present Supply of Salvarsan and Neosalvarsan. O. S. Ormsby and J. H. Mitchell, Chicago.—p. 250.

February, No. 8

145 Plea for Mothers. E. H. Thompson, Bluefield.—p. 273.
146 Preparation of Patient for Operation and for Postoperative Treatment. J. A. Guthrie, Huntington.—p. 276.
147 Erysipelas. H. R. Fairfax, McConnor.—p. 278.
148 Raynaud's Disease. E. S. DuPuy, Beckley.—p. 279.
149 Physical Methods of Treatment. O. B. Beer, Buckhannon.—p. 281.
150 Conservation of Health of Schoolchildren. R. H. Edmondson, Morgantown.—p. 283.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

February, X, No. 4

1 *Roentgenography in Dysentery and Other Cases. C. T. Holland, —p. 357.
2 *Intestinal Protozoa of Nondysenteric Cases. A. M. Smith and J. R. Matthews.—p. 361.
3 Spirochetes Occurring in Feces of Dysenteric Patients. H. F. Carter.—p. 391.
4 Treatment of Entameba Histolytica Infections by Alkresta Ipecac. J. W. W. Stephens and D. L. Mackinnon.—p. 397.
5 *Protozoal Findings in Nine Hundred and Ten Cases of Dysentery. H. F. Carter, D. L. Mackinnon, J. R. Matthews and A. M. Smith.—p. 411.
6 Arneth Count in Healthy Aboriginal Children of Northern Australia. A. Breinl and H. Priestley.—p. 427.

1. **Roentgen Examination in Dysentery.**—Holland reports negatively on this question. He says that the shadows in the roentgenogram do not show any difference from shadows which are frequently seen when bismuth or barium meals are being watched through a bowel. Bismuth does not adhere to the surfaces of either gastric or duodenal ulcer; why should it adhere to ulcers in the large bowel?

2. **Intestinal Protozoa of Nondysenteric Cases.**—In addition to the common intestinal protozoa which Smith and Matthews found among the 500 patients whose stools they examined, cyst-like bodies were observed in the feces of seven of the patients. These were the vegetable organisms described by Wenyon and to which the name "I body" has been given. The infection was pure in four cases, but in the other three cases the organism occurred with various protozoa. The infection was occasionally fairly heavy, and in two cases was remarkably persistent. In four cases the patients had a previous history of diarrhea, while in the remaining three cases there was none. Six out of the seven patients infected had been in the Mediterranean area. In the remaining case the patient had spent a year in France. The eggs of *Trichocephalus dispar (Trichuris trichiura)* were found in four cases. The infection was always small. Three of the patients concerned had been to subtropical parts of the world. One of the infections occurred, however, in a sailor who had never been out of home waters.

5. **Protozoal Findings in Dysentery.**—Among these 910 cases there were (other than protozoal) six cases which showed worms' eggs in the feces; four patients were infected with *Trichuris trichiura* (L.) (= *Trichocephalus dispar*, Rudolphi), one with *Ascaris lumbricoides*, L., and one with *Ancylostoma duodenale*, Dubini. The organism described under the name "I body" was found in five cases.

British Medical Journal, London

February 10, 1, No. 2928

7 *Therapeutic Administration of Oxygen. J. S. Haldane.—p. 181.
8 Minor Injuries to Joints. F. Romer.—p. 183.
9 Diseases of Male Urethra. F. S. Kidd.—p. 185.
10 Characters of Enterococcus. R. Donaldson.—p. 188.
11 Delayed Tetanus in Connection with Injuries to Bone not Presenting Obvious Signs of Sepsis. M. Foster.—p. 189.
12 *Smallpox Vaccination by Puncture. H. W. Hill.—p. 189.
13 Treatment of Malaria and Malarial Coma by Intravenous Injection of Quinin Urethan. Richet and W. B. Griffin.—p. 190.

7. **Therapeutic Administration of Oxygen.**—Haldane first discusses the physiologic effects of oxygen want, then how oxygen want is produced, what seems to be possible in directly combating it by oxygen administration, and what risks have to be avoided. Speaking of carbon monoxid poisoning, he says: In poisoning by carbon monoxid and similar respiratory poisons, death occurs when about 80 per cent. of the hemoglobin is disabled. If the patient is still alive there will, therefore, still be 20 per cent. of his hemoglobin available. But by administering pure oxygen one can at once increase the amount of oxygen in simple solution to about 2.5 c.c. This promptly averts any further danger from want of oxygen, and in carbonic oxid poisoning the oxygen rapidly drives out carbon monoxid from the hemoglobin, so that after fifteen or twenty minutes of continuous administration the oxygen may be discontinued. In acute inflammatory conditions of the lungs there is sometimes also want of oxygen, as shown by cyanosis; and in cases in which the inflammatory condition is accompanied by the presence of "edematous" exudation throughout the lungs, the cyanosis is often very great. When there is cyanosis (whether of the deep purple or gray type) due to hindered passage of oxygen through the alveolar walls, this can be combated by raising the percentage of oxygen in the alveolar air and so increasing the diffusion pressure. In ordinary cases of croupous pneumonia the alveolar oxygen pressure may be a matter of decisive importance.

In cases in which the source of danger is a failure of the circulation, the inhalation of oxygen may also be of use, and Haldane has seen the cyanosis in a case of valvular disease clear up at once on the administration of oxygen. In cases in which prolonged administration of oxygen seems desirable, the minimum quantity of oxygen which will remove the cyanosis should be carefully ascertained by observation of the patient. This minimum quantity is likely to be anything from 1 to 3 liters per minute. The quantity needed will depend on the weight and age of the patient; and if hyperpnea due to carbon dioxid is present, a larger quantity will be needed to reach a given percentage. A man at rest usually breathes about 7 liters of air a minute. The probable risks of prolonged administration of pure oxygen must be borne in mind, and if necessary balanced against the risks of allowing the oxygen want to continue.

12. **Smallpox Vaccination by Puncture.**—The method described by Hill is the one used in Canada since 1915. It is as follows: Wash the arm with soap and water, then with rectified spirits, and with ether. Expel the vaccine at three (or four) points on the arm, making a triangle (or square) having not less than 2 inches between the points. Puncture the arm through the drops of vaccine. Six tiny punctures, drawing no blood, are made through each drop, each set of six occupying a space of not more than ⅛ inch square. The needle is held almost parallel with the surface. Not over one thousandth of an inch enters the epithelial layer. A peculiar little "snick" is felt as the needle point goes in.

Lancet, London

February 17, 1, No. 4877

14 Influence Exerted by Military Experience of John Hunter on Himself and Military Surgeon of Today. G. H. Makins.—p. 249.
15 Naval Medicine in Great War. H. D. Rolleston.—p. 255.
16 *Passive Immunity Conferred by Prophylactic Dose of Antitetanic Serum. A. T. MacConkey and A. Homer.—p. 259.
17 *Clinical Agglutinometer; Apparatus for Use at Bedside or in Laboratory for Making Rapid Estimations of the Agglutinin Titer of the Blood. R. P. Garrow.—p. 262.
18 *Effect of Pyrexia on Inoculation Agglutinins. G. S. Wilson.—p. 263.
19 Unrestricted Diet of Sedentary Worker. A. D. Waller.—p. 272.

16. **Immunity Conferred by Antitetanic Serum.**—The object of this communication is to record some experiments made to ascertain the smallest quantity of antitoxin which would give complete protection for one week. The authors found that in the guinea-pig ¼, ½ or ¾ U. S. A. unit does not afford complete protection for one week, though these amounts saved life against a dose of toxin which was fatal to the controls. However, 1 unit or more gives complete immunity during at least one week. As an ordinary man is about 220 times heavier than guinea-pigs, this would mean that, calculating by body weight only, a man would require some 250 U. S. A. units to protect him for a week, while a dose of 500 U. S. A. units would allow for a man being twice as susceptible as the guinea-pig. As large a dose of 40 U. S. A. units (corresponding to at least 8,000 units in man) does not afford complete protection for a fortnight.

17. **Clinical Agglutinometer.**—The technic described by Garrow is an elaboration of Bass and Watkins' method with the object of rendering it not merely a qualitative test for agglutinins in the blood, but an accurate quantitative estimation of the agglutinin titer of the blood. This object is attained by means of an apparatus which Garrow devised, "clinical agglutinometer," for use at the bedside or in the laboratory.

18. Effect of Pyrexia on Inoculation Agglutinins.—A series of ninety-seven soldiers and others, who had been inoculated within the preceding twenty months against typhoid, was taken by Wilson and the agglutinin titer of the serum of each patient was estimated. The average agglutinin titer of serums obtained from patients who suffered from a febrile attack since inoculation was lower than that of those who had no such attack. As regards the effect of pyrexia on the agglutinin titer, there appeared to be no appreciable difference between a short, high, and a long, low temperature. The results as obtained by the macroscopic and microscopic methods, taken on the average, are very similar. The relations in the individual cases between the two methods are extremely variable, the macroscopic methods showing very marked agglutination in some cases in which the microscopic failed to demonstrate any at all. Wilson analyzes his findings as being only a suggestion that febrile conditions decrease the agglutinin titer. Persistence of agglutinins in the serum of a patient who has had a temperature of 102 F. for four days, whether estimated by the macroscopic or the microscopic method, is insufficient to justify a diagnosis of typhoid.

Journal of Tropical Medicine and Hygiene, London

February 1, XX, No. 3

20 Acanthokeratodermia Precornufaciens. A. J. Chalmers and S. Atiyah.—p. 25. To be continued.

Medical Journal of Australia, Sydney

January 20, I, No. 3

21 Recruit's Heart and Soldier's Heart. R. R. Stawell.—p. 49.
22 Case of Hydatidiform Mole. J. G. W. Hill.—p. 53.

January 27, No. 4

23 Treatment of Septic Compound Fractures. H. M. Moran.—p. 71.
24 Nerve Injuries Seen on Active Service. A. E. Mills.—p. 73.
25 Impressions of Medical Work at Front. J. Morton.—p. 75.
26 Experiences with No. 2 Australian Stationary Hospital. J. E. F. Deakin.—p. 76.
27 Bilharziosis. P. E. W. Smith.—p. 79.

February 3, No. 5

28 Sprue in North Queensland. A. Breinl and H. Priestley.—p. 95.
29 *Unusual Deformity of Hand. J. N. Griffiths.—p. 101.
30 Some Cases of Metastatic Meningococcal Infection of Eye. E. T. Smith.—p. 101.
31 Myxedema of Twenty Years' Duration Commencing in Child of Nine. J. C. Verco.—p. 102.

29. Deformity of Hand.—Early in infancy Griffiths' patient sustained a severe burn of the hand. The wound healed with the little finger bent back over the hand and under the scar tissue. The separate phalanges were palpable under the scar tissue. A misformed finger nail projected free from the skin.

Bulletin de l'Académie de Médecine, Paris

January 23, LXXVII, No. 4, pp. 103-114

32 *Uremia and the Internal Secretions. Rémond and Minvielle.—p. 105.
33 Correction of Malformed Noses without a Scar. (Les nez vilains corrigés chirurgicalement sans cicatrice.) J. Bourguet.—p. 107.
34 *Vaccine Therapy of Typhoid Osteomyelitis. P. Emile-Weil—p. 108.
35 Influence of Vasodilatation on Localization of Spontaneous Vaccinal Pustules. L. Camus.—p. 111.

32. Uremia and the Internal Secretions.—Rémond and Minvielle report a few experiences with rabbits, undertaken to demonstrate the defensive power of the association of the extracts of the liver and the thyroid against the toxic products in the serum of persons with uremia. The animals injected with a liver extract and thyroid extract seemed to bear injection of human uremic blood serum much better than the controls. It also afforded protection against cantharides nephritis to a certain extent.

34. Vaccine Therapy of Typhoid Osteomyelitis.—One patient was cured in three weeks by the vaccine therapy of a typhoidal suppurating bone process that had dragged along for two years, during which time it had been subjected to seven futile operations. The cure was complete in one week in another case after eleven months of the affection and three operations. Improvement amounting to a cure was obtained also in two weeks in processes of six and twelve months' standing in other cases. It failed only in one case and a sequester was found and removed, and the process is now healing.

Paris Médical

February 3, VII, No. 5, pp. 85-120

36 *Treatment of Diarrhea of Breast-Fed Infants. A.-B. Marfan.—p. 87.
37 Deficit Disturbances in Infants. (La notion de la "carence" en pathologie infantile.) E. Weill and G. Mouriquand.—p. 92.
38 The Factory Worker's Infant and Infant Mortality. A. Lesage.—p. 97.
39 Outdoor Convalescence for Infants. (La lutte contre la mortalité infantile par les convalescences de plein air.) H. Triboulet.—p. 104.
40 Physical Education; Its Aims and Control. H. Méry.—p. 105.
41 Pulmonary Tuberculosis in Infants under Two. H. Barbier.—p. 109.
42 Drosera in Whooping Cough. (Traitement de la coqueluche.) P. Lereboullet.—p. 114.
43 Progeria in Dwarfs. (Nanisme à type sénile ou progeria—sénilité prématurée.) P. Lereboullet.—p. 118.

36. Diarrhea in Breast-Fed Infants.—Marfan says that it is not necessary to keep the child exclusively on water when it develops diarrhea. It is enough to lengthen the intervals between feeding, and give a few teaspoonfuls of boiled water in the interim.

Presse Médicale, Paris

January 11, XXV, No. 3, pp. 25-32

44 *Gastro-Enteritis for which Uremia is Responsible. C. Lesieur.—p. 25.
45 Value of Alcohol in Sterilization of the Hands. E. Marquis.—p. 28.

44. Uremigenic Gastro-Enteritis.—Lesieur applies this term to a subacute form of gastro-enteritis of the hypertoxic, choleriform type. He has encountered it in 33 of 413 soldiers with gastro-enteritis in the course of six months, among 1,230 cases of diarrhea. The mortality was 33 per cent. and the postmortem findings resembled closely those of grave gastro-enteritis in infants, due to toxic action. The liver was always large but the kidneys showed severe lesions, mostly accompanied by lesions of long standing, explainable by some old acute infectious diseases, scarlet fever, typhoid, or else by abuse of alcohol. The heart was also decidedly below par. Bacteriologic examination gave variable findings, but the common substratum of the kidney lesions imprinted the stamp on the clinical picture, with its choleriform condition, oliguria and uremia.

Progrès Médical, Paris

January 13, XXXII, No. 2, pp. 9-18

46 *Tests of the Hearing. (Expériences relatives au contrôle auditif.) H. Gosset.—p. 9.
47 Relapsing Fever in Servia. Duchamp.—p. 10.
48 Extract of Blood Platelets in Arrest of Hemorrhage. (Les propriétés physiologiques des globulins, leur rôle dans la coagulation du sang.) E. Forgues.—p. 14.

46. Detection of Simulation of Deafness.—Among Gosset's tests for simulation is one in which he tells the patient to give the sound "Ah" as high as he can and then continue it down as low as he can. The truly deaf stop when they reach the point below which they cannot hear their own voice, while the simulator continues to the base of the scale. The test can be applied reversed. In the cases of deafness from shell shock, the immobilized organ, having its function arrested, soon falls a prey to degeneracy. In deafness from any shock, sensation and motor and psychic factors cooperate in maintaining the derangement, and it must be acted on by each of these three routes. Reeducation is the guiding principle.

Revue Médicale de la Suisse Romande, Geneva

November-December, 1916, XXXVI, No. 11-12, pp. 677-824

49 Conditions Producing Amphoric Resonance with Induced Pneumothorax. L. Bard.—p. 677.
50 Association of Drugs. (Des associations médicamenteuses.) M. Roch.—p. 684.
51 *Surgical Treatment of Pyloric Stenosis in Infants. E. Monnier.—p. 704; H. Vulliet.—p. 710.
52 Fibrinous Pseudo-Râles with Empyema. F. Heim and Jeanneret-Minkine.—p. 716.
53 *Nerve Blocking for Operations on Limbs. (Toutes les interventions chirurgicales sur les membres peuvent, à l'aide de points de repère précis, relever de l'anesthésie tronculaire.) A. Jentzer.—p. 720.
54 *Spontaneous Dislocation of the Hip Joint in Congenital and Infantile Spastic Paralysis. A. Richard.—p. 735.
55 Obstruction and Inflammation of Wharton's Duct. (Whartonite aigue suppurée à la suite d'une obstruction par un calcul salivaire.) L. Du Pan.—p. 765.

51. **Operative Treatment of Stenosis of the Pylorus in Infants.**—Monnier has applied Rammstedt's method in four cases of infants, 3, 4 and 8 weeks old, and the results were most satisfactory. One child was so emaciated from the constant vomiting that any intervention seemed hazardous. But the vomiting stopped at once after the operation and the infant rapidly recuperated. None of the children probably would have survived a more complicated operation. The Rammstedt technic is merely to slit lengthwise the muscular fibers of the pylorus which are always hypertrophied in these cases. The incision leaves the mucous membrane intact. The cut edges spread apart for 2 or 3 mm. leaving a gap in the depths of which the mucosa can be seen slightly protruding. No suturing is done; at most a small flap of omentum is drawn over the gap. The whole procedure takes only a few minutes.

Vulliet discusses the limits for conservative measures, and gives an illustration of the Rammstedt technic as applied with complete success in an infant almost moribund from the incessant vomiting. The operation is done under a few drops of chloroform or ether or both, drawing the pyloric region out through a small opening above the umbilicus. The pylorus formed a hard tumor, in size, shape and hardness like an almond, the surface anemic but nothing to suggest an inflammatory process. He incised the serous and muscular coats down to the mucosa, and the cut edges gaped widely but there was scarcely any bleeding. Rammstedt warned that the feeding of the infant must be resumed very cautiously or there is liable to be trouble. In this case the infant was so hungry that it was given too much at first, and the child vomited anew while the weight declined. With more scrupulous care as to feeding and finally a wet nurse, all trouble subsided.

53. **Nerve Blocking for the Limbs.**—Jentzer has worked out on the cadaver the best means and sites for nerve blocking on the limbs, and reports excellent results from this method of anesthesia alone or supplemented by infiltration anesthesia. He gives the details of thirteen cases, mostly of suppurating tuberculous processes, including one case in which three large drains were drawn through the three fistulas, all emerging together in the palm. He usually combined infiltration to encircle the limb with the nerve blocking technic. An important advantage of the latter is that it actually cuts off the pain. Sensation does not reach the perceiving centers, while with general anesthesia, although the patient does not feel the sensation of pain yet it reaches the nerve centers and acts on them, and this is undoubtedly a factor in surgical shock. The work issues from the surgical clinic at Geneva.

54. **Spontaneous Dislocation of the Hip Joint with Spastic Paralysis.**—Richard discusses the different forms of Little's disease as encountered at the surgical clinic at Bâle, and the cases of spontaneous dislocation of the hip joint as observed there and published in the literature. The two personal cases were a young man and a girl of nearly 7. The child has a positive Wassermann although the mother gives a negative reaction. The spastic paralysis in the region not only modifies the position of the parts of the joint but interferes with their functioning and hence with normal growth. The young man was treated by reduction, tenotomy of the adductors and of the tendon of the fascia lata, but this not proving successful, arthrodesis was done, with tenotomy later of the sartorius and anterior rectus. The desired result was thus realized in time. The little girl was treated with tenotomy of the adductors, of the tendon of the fascia lata and part of the anterior rectus, with immobilization as for congenital luxation. But no benefit was derived, complete failure resulting. The outcome evidently depends in large measure on the intensity of the spasmodic contracture. Arthrodesis is evidently the only recourse when the acetabulum is displaced.

Archiv für klinische Chirurgie, Berlin

1916, CVII, No. 3, pp. 379-530. Last indexed Dec. 23, 1916, p. 1975

56 *Gallstone Obstruction and Retention Main Factor in Destructive Processes. (Die Gallensteinkrankheit im Lichte der Anfalloperation.) Sprengel.—p. 379.

57 Case of Two Complete but Empty Supernumerary Prepuces. (Eine bisher unbekannte Geschlechtsteilmissbildung beim Mann.) F. Danziger.—p. 463.

58 *Diversion of Ascitic Fluid into Subcutaneous Tissue Causing Large Local Accumulation of Fluid. (Entstehung eines grossen Hautwassersacks nach subkutaner Ascitesdrainage.) K. Henschen.—p. 469.

59 *Cartilage Transplants. (Neue Experimente zur Frage der homoplastischen Transplantationsfähigkeit des Epiphysenknorpels und des Gelenkknorpels.) F. H. von Tappeiner.—p. 479.

60 Abdominal War Wounds, Especially Wounds of the Liver. (Ueber Bauchschüsse.) E. Liek.—p. 509.

56. **Cholelithiasis as Illuminated by Local Findings in Operating During an Attack.**—Sprengel gives four colored plates showing that in the gallbladder, as well as in the appendix, the acute mechanical disturbances from obstruction of the outlet are entirely different from the disturbances that occur with slowly developing chronic processes. The latter are of far less pathogenic importance as the retention is mainly responsible for the havoc set up. Sprengel's experience with 104 operative gallstone cases in eighteen recent months shows that obstruction of the outlet and retention entail necrotic processes in the mucosa and perforation, whether there is infection or not, if the contents are virulent. The infection may be and often is secondary. In 43 of the cases the operation was done in the midst of an acute attack. In 26 of these cases the contents of the gallbladder were virulent and an insoluble stone was found plugging the outlet in 21 of them, in 2 others this was dubious, and in 3 the outlet was completely obstructed although not by a stone. In a further group of 16 cases the contents were virulent, but the stones were of the soluble kind, and the obstruction was only temporary. These are the typical "colic" cases. In a third group of 3 cases the obstruction was complete but the contents were sterile and merely hydrops resulted. In all these types repair sets in as soon as the obstruction to the outlet has been removed.

58. **Outcome of Subcutaneous Drainage of Ascitic Fluid.**—Henschen gives illustrations of a woman who had been treated for ascites five years before by diversion of the ascitic fluid into the subcutaneous tissue. It had accumulated in the abdominal wall, forming a large pendant bag on both sides. The case shows that the tissues are unable to absorb such excessive amounts of fluids. The woman had to be tapped occasionally. Conditions were about the same when examined the third and fifth years.

59. **Cartilage Transplants.**—Tappeiner reports extensive experimental work on rabbits and dogs with homoplastic implants of epiphyseal and joint cartilage. The joint cartilage gave the best results, but even these were disappointing. Only in two of the total series of rabbits did the cartilage retain its shape.

Berliner klinische Wochenschrift

January 8, LIV, No. 2, pp. 25-48

61 Present Status of our Knowledge of Ranula Cysta. E. Neumann.—p. 25.

62 *The Artificial Hand in the Practice of Medicine. (Die künstliche Hand im ärztlichen Beruf.) M. Cohn.—p. 29.

63 Methyl Violet Medicated Gauze. R. Hey.—p. 32.

64 Sclerodermia with Sclerodactylia. J. Zadek.—p. 36.

65 Spontaneous Infectious Gangrene of External Genitals in Soldiers. J. Kyrle.—p. 37.

62. **The Artificial Hand in the Practice of Medicine.**—Cohn had been practicing medicine for seventeen years when the loss of his left hand compelled the use of an artificial hand, and he relates that he is able to work with it almost as before, with very few exceptions. He knows of three other physicians who have lost a hand in the war, and he sees no reason why those long trained and long practicing medicine cannot continue their medical career. He found recently, however, that the societies protecting physicians against suits for malpractice have annulled his policies. He mentions a physician in America, who, he has been told, seems to have been able to keep up his practice perfectly well with an artificial hand.

Münchener medizinische Wochenschrift, Munich

January 2, LXIV, No. 1, pp. 1-40

66 *Epidemic of Myositis Simulating Cerebrospinal Meningitis. (Epidemie von myositischer Pseudogenickstarre.) H. Curschmann.—p. 1.

67 *Causes of Death with Intraperitoneal Rupture of the Bladder. F. Rost.—p. 5.

68 *Search for and Treatment of Bacilli Carriers. (Ueber Bazillenträgeruntersuchungen.) P. T. Müller.—p. 6.
69 Nearly Complete Utilization of Synthetic Ethyl Esters of Stearic Acid. (Die Ausnutzung synthetischer Fettsäureäthylester beim Menschen und beim Hunde.) H. H. Franck.—p. 9.
70 Means Proposed to Increase the Strength of the Young. (Hebung der Volkskraft durch Kraftigung unserer Jugend.) Doernberger. —p. 10.
71 Trigeminol Neuralgia and Anesthetization of Gasserian Ganglion. F. F. Härtel.—p. 11.
72 *A Serochemical Reaction in Syphilis. C. Bruck.—p. 25.
73 Biceps Prothesis. (Zur Versorgung von kurzen Vorderarmstümpfen durch Muskelunterfütterung.) H. Spitzy.—p. 26.
74 Roentgen Therapy Preferable to Operation for Tuberculous Cervical Glands. M. Wilms.—p. 29.
75 *Improved Technic for Inguinal Herniotomy. (Ein Verfahren der Operation von Leistenhernien.) E. Seitz.—p. 29.
76 Nervous Heart and Heart Neuroses. Geigel.—p. 30.
77 Pathology of War Epidemics. K. Helly.—p. 32.
78 Simplified Culture Medium for Typhoid Group. W. Kulka.—p. 32.
79 Determination of the Rickettsia Prowazeki in Typhus Patients. H. da Rocha-Lima.—p. 33.
80 Reinfusion of Blood after Puncture of Recent Hemathorax. Elmendorf.—p. 36.
81 Injuries from Asphyxiating Gases. P. Ujlaki.—p. 37.
82 Bath and Disinfection Cart for Field Use. R. Ohm.—p. 37.
83 Support for Pelvis. (Eine Feldbeckenstütze.) O. Vulpius.—p. 39.
84 *Actively Movable Artificial Arms. (Armersatz nach Carnes oder Sauerbruch?) von Baeyer.—p. 39.

66. Epidemic of Myositis Simulating Meningitis.—Curschmann describes some typical cases out of an epidemic of severe articular and muscular rheumatism affecting the spine and muscles in the neck exclusively, and thus producing the clinical picture of epidemic meningitis at first. In most of the cases this acute febrile polyarthritic or monomyositic or polymyositic rheumatism remained restricted to the neck region. The epidemic was quite widespread through the Mainz region in children and adults during the spring of 1908. The muscular process showed no signs of migrating to other regions. The sternocleidomastoid and trapezium muscles were tender and in some cases swollen. The onset was always stormy, with vomiting and high fever, and the fever kept high with subsidence by lysis. Notwithstanding this stormy onset, the myalgia and the contracture seemed to pass off harmlessly in from four to five days or six to eight; only in two cases did the affection last three weeks. In a few cases there seemed to have been a prodromal stage of pains in limbs and back resembling those of influenza, and in one case actual acute articular rheumatism had preceded and then merged abruptly into the cervical myositis. After recovery, unilateral chorea followed. Treatment in all the cases was merely with salicylates and local application of heat, dry or moist.

67. Cause of Death in Intraperitoneal Rupture of the Bladder.—Rost protests against the general assumption that peritonitis is responsible for the early fatal outcome in these cases. The patients who die within the first three days succumb to uremia, not to peritonitis; in fact, before peritonitis has had time to develop. This assertion is based on extensive clinical and experimental work, and it teaches the necessity for operating at once, without waiting to see if peritonitis is going to develop.

68. Search for Bacilli Carriers.—Müller reports here that 165 carriers of typhoid, paratyphoid or dysentery bacilli were found among the 20,019 men examined in about two months last spring. Among the lessons taught by his experience is the necessity for systematic reexamination at intervals of all the men who have anything to do with the preparation or handling of the food. He also emphasizes the necessity for repeated reexamination of carriers of dysentery bacilli, as the conditions of their elimination vary at different times. His epidemiologic studies have further shown that an indigestible meal or exposure to cold and wet is liable to bring on the disease in a previously healthy carrier.

72. A Chemical Seroreaction in Syphilis.—Bruck states that during the ten years since he, with Wassermann and Neisser, applied the complement fixation test to the diagnosis of syphilis, he has been constantly striving to work out a chemical technic which would have the same diagnostic significance and would render the amboceptor, complement, etc., unecessary. Recently he noticed that the nitric acid precipitate of syphilitic serum behaves differently from that from normal serum. With normal serum the precipitate dissolves completely, while with syphilitic serum it persists and piles up in a gelatinous and characteristic pile on the floor of the test tube. The reaction seems to be due to a quantitative difference; syphilitic serum seems to contain more of the substance which nitric acid precipitates. His tests of the reaction on 200 syphilitic and 200 normal serums gave almost constantly concordant results, harmonizing with the clinical findings and almost always with the Wassermann findings. The patients with positive Wassermann findings all gave a positive chemical reaction, with the exception of one case of latent syphilis, and two in the second stage of syphilis who gave only a weakly positive reaction. The negative Wassermann cases were all persistently negative in the chemical test, with the exception of one case of inherited syphilis and one of a large defect in the palate. The Wassermann dubious findings were always decidedly positive or negative with the chemical test, and the effect of treatment could be traced in the chemical reaction.

The official pure nitric acid sometimes varies in its proportions. The one on which his technic is based contained in each 100 gm. 24.77 HNO_3, in each 100 c.c. 28.48 HNO_3. The specific gravity was 1.149. It is best to test the nitric acid until the exact amount is determined which, with normal serum, still gives a negative reaction. This amount is then to be used for the test. With the nitric acid he used, 0.3 c.c. answered the purpose. The test is made with 0.5 c.c. clear serum in a test tube to which is added 2 c.c. distilled water, and the whole shaken. Then, with a precision pipet, the 0.3 c.c. of the Ac. nitr. purum of the German pharmacopeia is added and the whole thoroughly shaken and then set aside at room temperature for ten minutes. Then 16 c.c. of distilled water at room temperature (about 15 C.) is added and, closing the tube with the finger, it is shaken up and down three times carefully, not vigorously enough to make it foam. This is repeated ten minutes later, and the tube is then set aside for half an hour. By this time the precipitate is entirely dissolved in the tube with normal serum, while the syphilitic serum shows a distinct flocculent turbidity. In two or three hours or, better still, in twelve hours, the gelatinous and characteristic precipitate is piled up on the floor of the test tube.

75. Improved Technic for Inguinal Herniotomy.—Seitz shows by two illustrations the weak point left by the Bassini technic and describes how he obviates this by slitting the hernial sac and spreading it out flat and suturing it over the gap. The neck of the sac is ligated and cut off close. He has applied this method only in cases of indirect inguinal hernia, but he thinks it is applicable also for the direct.

84. Artificial Arms.—Baeyer discusses the various advantages of the Sauerbruch and the Carnes systems of prostheses for the arm. He says that Carnes' patents have been bought by a German philanthropic organization and a Berlin factory is already turning out the arms in large numbers. The Carnes artificial arm is under control of the muscles of the shoulder and back, while Sauerbruch provides the stump with passages through the muscles from which voluntary control of the prothesis can be realized. Parallel tests with both systems seem to show that the Sauerbruch principle is simpler, while the working with the arm is less fatiguing. The men could pick up a match out of a box of matches, shuffle cards, and draw their sword out of the scabbard—three types of ordinary movements. On the whole, he declares, and for the general run of men, the Sauerbruch method seems the most advantageous.

Wiener klinische Wochenschrift, Vienna

January 4, XXX, No. 1, pp. 1-32

85 Treatment of War Wounds of Vessels and Traumatic Aneurysms. L. R. v. Rydygier.—p. 1.
86 *Operative Treatment of Abdominal Wounds in Later Stage. (Bauchschüsse im Spätstadium.) B. O. Pribram.—p. 2.
87 *Tardy Tetanus. Doberer.—p. 8.
88 High Resection of Nerve with Short Stumps below the Knee. (Entfernung des Fibularestes und hohe Resektion des Nervus peronaeus bei kurzen Unterschenkelstümpfen.) P. Erlacher. —p. 12.
89 New Thumb Made with Second Metacarpus as Terminal Bone. (Daumenplastik.) B. R. v. Arlt.—p. 15.
90 Prophylaxis of Gas Phlegmons and Tetanus by Mechanical Cleansing of Wounds and Peruvian Balsam. M. Segen.—p. 16.

91 Glue in Making of Provisional Protheses. (Ueber die Verwendung des Leimes in der orthopädischen Werkstätte.) R. Werndorff.—p. 16.
92 Exposure to Tuberculosis during the War. (Ueber tuberkulöse Exposition und exogene tuberkulöse Infektion unter den besonderen Verhältnissen des Krieges.) H. von Hayek.—p. 29. Continued.

86. **Abdominal Wounds.**—Pribram reiterates that so many men with abdominal wounds succumb in the course of the month after the injury that recovery under conservative measures alone is extremely rare. The patient may even feel quite well for days or weeks, as the most dangerous processes may run a symptomless course for a time. Intraperitoneal fecal abscesses may cause no symptoms except an evening rise in temperature, but roentgenoscopy may locate them. A typical laparotomy examining the whole intestine is too often fatal at this stage; small incisions are better, at the points where trouble is suspected. Immediate suture is preferable when the small intestine has been injured, but with the large intestine it is enough to expose the fistulas. They generally heal spontaneously. Access to a wound of the large intestine may be better from the rear; while injury of the colon flexures is best reached by resection of the corresponding ribs. Drainage toward the back is recommended but to drain the small pelvis, the patient should lie prone on the abdomen, or the drainage should be into the rectum. Spinal and local anesthesia render excellent service. These recommendations are based on analysis of 161 secondary operative cases of war wounds of the abdomen, with eighty-two recoveries.

87. **Tardy Tetanus.**—In the case reported 128 days had elapsed since the injury and the man was apparently in sound health, when, without any cause that could be discovered, tetanus developed. After a prolonged course, with injection of 400 antiserum units, the tetanus subsided. A month later the scraps of shell in the tissues were removed and at once the tetanus flared up again, but in a mild form for five days, and since then the man, an Italian prisoner of war, has been in good health. Some of the mice inoculated from the tissues around the shell scraps developed tetanus.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 7, XXXVIII, No. 2, pp. 17-32

93 *True Significance of Eosinophilia in the Mild Anemias of Schoolchildren. F. Scaroni.—p. 19.
94 *Trauma and Locomotor Ataxia. E. Terrile.—p. 20.

January 11, No. 3, pp. 33-48

95 Anchilostoma or Anguillula. E. Bertarelli.—p. 33.
96 Symptoms Induced by Compression of Trunk Nerve from Traumatic Enlargement of Vessels. C. Mantelli.—p. 34.

93. **Eosinophilia in Anemia of Schoolchildren.**—Scaroni gives the particulars of examination of forty-two schoolchildren all with more or less anemia. The eosinophils ranged from zero to 25.5 per cent., and in every case with eosinophilia over 3, 7 and 12 per cent. ascarides or trichocephalus eggs were found in the stools and also in a number with eosinophilia as low as 4 per cent. School anemia was thus shown to be the work of helminths in all but twelve of the forty-two cases.

94. **Trauma and Locomotor Ataxia.**—Terrile's patient was a man of 65 in the initial phase of tabes when an industrial accident materially hastened and aggravated its course.

Policlinico, Rome

January 14, XXIV, No. 3, pp. 73-88

97 Treatment of Septic Wounds. (Ferite settiche.) L. Silvestrini.—p. 73.
98 *Rational Constitution of Local Boards of Health. T. Gualdi.—p. 78.

Supplementary Number, pp. 105-128

99 Hysteria with Sciatica; Two Cases. E. Trocello.—p. 105.
100 Eczema in Children, Acidosis, and Calcium Treatment. M. Famini.—p. 110.

98. **Rational Constitution of Boards of Health.**—Gualdi states that Italy is proud of the fact that she stands at the head of the other nations of Europe in legislation on matters of public health. From 1888 to date there has been systematically organized a wise system for public health matters which has worked well through the years and even during the upheavals of the war. The central administration, the general board of public health, watches over the entire country and intervenes wherever there is a menace of epidemic disease. It also expends most wisely the funds appropriated by the state for hygienic purposes, carrying on successful campaigns against the chronic scourges of the country. But aside from the great central administration, matters are far from satisfactory. The local boards of health, even when in charge of capable hygienists, are suffocated by formalism and political opportunism, without any means for experimental control. Outside of the cities, he says, conditions are actually medieval, and he urges that the local boards of health should be abolished and that each district should have a branch of the central public health service.

Riforma Medica, Naples

1916, XXXII, No. 46, pp. 1257-1284

101 Diarrhea and Dysentery among the Troops. G. Izar.—p. 1257.
102 *Test for Sugar in Urine and Cerebrospinal Fluid. A. Martiri.—p. 1264.

No. 47, pp. 1285-1312

103 Action of Fatigue Toxins on the Central Nervous System and on the Blood. L. Ferrannini and S. Fichera.—p. 1285.
104 Intoxication from Asphyxiating Gases. P. Sisto.—p. 1290. Conclusion.
105 Antimeningococcus Serotherapy. A. Montefusco.—p. 1294. Commenced in No. 46, p. 1267.

102. **Dosage of Sugar in Urine and Cerebrospinal Fluid.**—Martiri thinks that the method he describes obviates certain disadvantages of the Fehling technic. He adds the urine to the reagent. The latter is a mixture of 1 c.c. of Fehling's first solution, with 1 c.c. of the second Fehling solution, and 10 c.c. distilled water, heated to boiling point. Then he adds 4 or 5 c.c. of concentrated ammonia and keeps the fluid boiling gently. Then, with the other hand, he drops in the urine from a 1 c.c. pipet graduated by hundredths. He adds the urine very cautiously so that the decoloration reaction is very distinct. As the 2 c.c. of the Fehling solution are reduced by 0.01 gm. of sugar, the amount per liter can be estimated by dividing the number of cubic centimeters in the liter by 0.01, and dividing the quotient by the numbers of hundredths of a cubic centimeter required for the reaction in the test tube

$$n : 0.01 :: 100{,}000 : x$$

$$x = \frac{1000}{n}$$

With the cerebrospinal fluid, the quantities of the reagent must be only one twentieth of the above amounts.

Brazil-Medico, Rio de Janeiro

January 20, XXXI, No. 3, pp. 17-24

106 Beriberi or Beriberic Syndrome. C. Fraga.—p. 3. Continuation.
107 *Retention of the Placenta Treated by Injecting Saline into the Placenta through Umbilical Vein; Two Cases. D. von Bassewitz.—p. 21.

107. **Retention of the Placenta Treated by Gabaston's Hydraulic Method.**—Instead of Credé expression or other manual method, Gabaston fills up the placenta with saline, injecting it through the umbilical cord. As the placenta thus becomes distended, it is liable to stimulate the uterus to new contractions, while the fluid within and accumulating behind the placenta aids in separating and facilitating its expulsion. This "hydraulic method" may produce the desired result in a few minutes. In the first of the two cases reported here by Bassewitz, the atony of the uterus was marked, but under the injection of the saline from a can 1.5 meters above the level of the bed, the uterus began to contract vigorously when 800 c.c. of saline had thus been infused. Within fifteen minutes the placenta was spontaneously expelled. In the second case, notwithstanding injection of 4 liters of the fluid, no effect was apparent, and the placenta was removed by the protected hand, the uterus having been drawn out to the vulva with forceps. This case teaches that this method is of little if any use with merely partial lateral separation of the placenta, but it can be counted on for prompt and certain effect in cases of total retention of the placenta from inertia of the uterus, or in cases of abnormal adhesion between the fetal and the maternal placenta. Bassewitz warns that this hydraulic method might do great harm in case of tubal attachment of the placenta, as the fluid might traverse the tube and enter the abdominal cavity.

Semana Medica, Buenos Aires

XXIII, 1916, No. 47, pp. 511-538

108 Lymphocytosis in Syphilis. C. P. Mayer and A. C. Gourdy.—p. 513. Continuation. See abstr. 73, p. 668.

109 *The Milk Supply in La Plata. (La leche de consumo en La Plata.) G. B. Cavazzutti and E. D. Cortelezzi.—p. 515.

No. 48, pp. 539-582

110 *Tuberculin Therapy Applied in Diagnosis of Tuberculosis. (La prueba diagnostico-terapeutica a la tuberculina. Nuevo metodo vacunoterapico aplicado al diagnostico.) J. J. Viton.—p. 539.

111 Vaccine Therapy of Gonococcus Infection. (Estadistica y tratamiento de la gonococcis por el Haptinogeno Gono.) H. Dasso. —p. 543.

112 Prophylaxis of Criminal Abortion. O. L. Bottaro.—p. 548.

113 No Foundation for Alleged Antitoxic Action of Hypophysis Extracts. B. A. Houssay and L. Giusti.—p. 559.

114 Anatomy of the Larynx. (Contribucion al estudio de los ventriculos de Morgagni et sus apendices.) A. S. Lagomarsino.—p. 565.

115 Vaccine Therapy of Pneumonia in Rural Districts. (El Haptinogeno Mendez en el medio rural.) J. M. Riera.—p. 569.

116 *Improved Technic for Embalming. (Nuevo procedimiento para la conservacion de los cadaveres.) V. Delfino.—p. 571.

117 Vibratory Plasmogenesis. A. L. Herrera.—p. 572.

109. **The Milk Supply at La Plata.**—This article with eighteen illustrations shows conditions prevailing in the La Plata region and outlines the reforms to be striven for.

110. **Vaccine Diagnosis and Therapy of Tuberculosis.**—Viton gives minute doses of tuberculin as a means of differentiating the cause of symptoms in puzzling cases. If tuberculosis is responsible for the symptoms, a pronounced change for the better is manifest even under these minute doses, and the tuberculin treatment can then be continued and amplified. He calls this the diagnostic-therapeutic tuberculin test, and extols its advantages over the tuberculin skin and other local tests. There are no contraindications or by-effects from these minute doses, while the favorable modification under them is often remarkable. He uses a ten-millionth or fifty-millionth solution of the tuberculin, usually taking 1 c.c. of ten-millionth solution and diluting it in 4.5 c.c. of sterilized water with a little of a 0.25 per cent. solution of phenol. Injecting $\frac{1}{20}$ c.c. of one of these solutions, he watches the temperature, the weight and the general and special phenomena. If no change is apparent, he repeats the injection the sixth or seventh day, increasing the dose by twentieths of a cubic centimeter, and continuing this at intervals of six or more days up to fifteen days. With improvement under the tuberculin, confirming the specific nature of the trouble, the tuberculin is then continued as a therapeutic measure. These minute doses, he says, do not induce any reaction but they gently and insinuatingly start the production of antibodies. This method, he adds, has not only revealed tuberculosis in many puzzling cases, but has resulted in its cure, and he commends it, as he says, *con verdadero entusiasmo.*

116. **Preservation of Cadavers.**—Delfino comments on Dubois' method of dehydration of the tissues as a simple and effectual method of mummification. All that is necessary is to inject freely into the body cavities and tissues certain substances, such as ether, benzine, etc., which attract the water out of the tissues.

Siglo Medico, Madrid

January 13, LXIV, No. 3292, pp. 17-32

118 Etiology and Pathogenesis of Leukemic Processes. G. Pittaluga. —p. 17.

January 20, No. 3293, pp. 33-48

119 *Diabetes Insipidus. G. Marañon.—p. 36.

120 Treatment of Ulcerated Varicose Veins in the Leg. (Terapeutica dermatologica: ulceras de las piernas.) E. de Oyarzabal.—p. 39.

121 Caffein Citrate in Strangulated Hernia. D. B. Gil.—p. 41.

119. **Diabetes Insipidus.**—Marañon's experience with three cases has confirmed the modern views as to the importance of the pituitary body in the genesis of diabetes insipidus. In one boy of 13 the diabetes insipidus developed in a pronounced form a few days after he had been shot in the head, the bullet lodging at the sella turcica and blocking the egress of the pituitary secretion. He voided up to nine liters of urine a day but the amount dropped back to normal for twenty-four hours after injection of 1 c.c. of hypophysis extract. No other measures had any influence on the polyuria. Necropsy confirmed the radioscopic findings that the bullet had merely blocked the outlet, not injuring directly, not even compressing the lobes of the hypophysis, but interrupting its connection with the bottom of the ventricle. Syphilitic lesions of the hypophysis give the best prognosis for diabetes insipidus. As soon as normal conditions for the passage of the hypophysis secretion into the cerebrospinal fluid are restored, true diabetes insipidus subsides spontaneously. The pancreas may be diseased at the same time, which explains cases in which the insipidus merged into true diabetes mellitus. There is probably both a nervous and an internal secretion factor involved. Hypophysis treatment is indicated in every case of true diabetes insipidus. The injection of 1 c.c. answers the purpose and the effect lasts for thirty hours, according to Marañon's experience. The injections have to be kept up indefinitely, but there is reason to assume that if the hypophysis function is not entirely abolished, the organotherapeutic stimulus may rouse it to approximately normal functioning. This occurred in one of his cases. Restriction of fluids never seemed to have much influence on the polyuria.

Russkiy Vrach, Petrograd

1916, XV, No. 44, pp. 1033-1056

122 Unpublished Letters from Pirogoff, 1840. S. Y. Shtraikh.—p. 1033.

123 *Anesthesia under the Influence of Expulsion of Blood from the Region by a Tourniquet. (Anesteziia pod vliyaniem kroveostanav. zhguta.) N. N. Petroff.—p. 1036.

124 *The Question of Inherited Infectious Diseases. (O nasliedstvennosti pri zarazhnikh zabolievaniyakh.) A. A. Yurgeliunas.—p. 1038.

125 Gold-Potassium Cyanid in Local Treatment of Lupus. (O miestnom liechenii volchanki aurum kali-cyanatum.) A. K. Khitrovo.—p. 1043.

126 *Dietetic Treatment of Rachitis. I. A. Shabad.—p. 1047. Continuation.

127 Hot Air Jet in Treatment of Suppurating Wounds. (Liechenie gnoinikh ran dushami goryachago vozdukha.) P. I. Baradulin. —p. 1049.

128 Retractors for Amputations. A. N. Treguboff.—p. 1051.

123. **Anesthesia Below the Tourniquet.**—Petroff remarks that even the ancients and the medical men of the Middle Ages had noticed that pain was not felt so much after the root of the limb had been tied around to arrest bleeding after an injury. But the danger of damaging the nerves and other tissues by the pressure and the unreliability of the results have always prevented utilization of this method of controlling pain. Braun concluded from the result of experiments on himself that the danger of paralyzing the nerve is too imminent to allow the use of the method in the clinic. Petroff rejects his conclusions, however, as Braun ligated merely fingers in his tests. The nerves were squeezed against a bone background, in which respect the conditions differed materially from those with a tourniquet applied to the root of a limb. Numbness and other signs of injury afterward must be referred to this pressure against the bone background.

At the same time, occasions may arise in war in which a tourniquet has had to be applied to arrest hemorrhage, and the wound and loss of blood have reduced the strength. The nerves have lost temporarily the faculty of transmitting sensations. In one such case the tourniquet had been in place for several hours before the shattered leg could be amputated at the middle third. The man was extremely weak, the pulse scarcely perceptible, when brought to the hospital. After injection of saline, the leg was amputated without the man's feeling it. In another case described the constriction had not been very tight and the circulation had not been entirely arrested, and only the superficial tissues were anesthetic. In short, Petroff reiterates, there is no need to inflict general or local anesthesia on persons whose limb is already completely anesthetized. The possibility that this may be the case should not be forgotten.

124. **Inheritance of Infectious Diseases.**—Yurgeliunas reiterates as the conclusion of his long study that direct transmission of infectious diseases by the germinal route, according to the conception of the older authors, is no longer admissible. Transmission of syphilis by way of the placenta is possible but rare. The heredity with infectious diseases seems to be of a more general character, a tendency to dystrophic processes.

126. **Dietetic Treatment of Rachitis.**—Shabad's conclusions have already been given in these columns, March 10, p. 815.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

January 6, LXI, I, No. 1, pp. 1-64

129 *Deforming Juvenile Osteochondritis. H. Timmer.—p. 3.
130 *Chronic Tachycardia and Its Treatment. (Over chronische tachycardie en de beteekenis der extracardiale hartzenuwen.) E. W. G. Vinnis.—p. 11.
131 Treatment of Diphtheria Bacilli Carriers. J. L. A. Peutz.—p. 17.
132 The Anticholera Campaign in the Netherlands East Indies. O. L. E. De Raadt.—p. 22.
133 *Falling of the Hair as Sign of Latent Tetany. (De aren Celsi als verschijnsel van latente tetanie.) G. C. Bolten.—p. 24.

129. **Juvenile Deforming Osteochondritis.**—Timmer's first patient was a boy of 7 who had been limping for some time. Roentgenographs showed the findings characteristic of Perthes' disease. There has been gradual improvement during the year since. This affection has a favorable prognosis. It has been called variously quiet hip disease, pseudocoxalgia, epiphyseal coxa valga, and deforming juvenile arthritis. Trendelenburg's sign is almost always present. Notwithstanding the clinical improvement, the roentgenograms show that the epiphysis grows flatter and flatter and spreads and the broad flat head merges into a short, thick neck. The symptoms may simulate a tuberculous process in the neck and he discusses other affections liable to be confused with it. There is no pain or tenderness with this Perthes' affection. The gait resembles that with congenital luxation of the hip joint. The limb can be flexed and extended freely, but abduction is much restricted and rotation a little. Perthes was misled into operating in his first case, suspecting tuberculosis, but found no signs of inflammatory infiltration. The abnormal conditions were the shape of the head, the unusual thickness of the cartilage, and the islands of cartilage tissue in the spongiosa of the head. Certain cases that have been published with illustrations as cases of tuberculous trouble are now considered to have been of this type. Timmer does not discuss the treatment.

130. **Chronic Tachycardia.**—Vinnis reports a case which throws considerable light on the questions as to the limit of a rapid pulse rate compatible with health of the heart muscle, and whether the influence of the nervous system, as in the acceleration of the rate under emotional stress, is an adaptation phenomenon or an actual injury. His patient was a man of 50 who had had a pulse of 140 for three years. There was an old history of acute articular rheumatism and syphilis, but the heart did not seem to have been touched, and the rapid pulse was ascribed to nervous influences. The tracings of the jugular and radial pulse showed a chronic regular tachyatria, as Vinnis calls it, actual auricular flutter, the ventricle rate scarcely one to two of the contractions of the atrium. The cyanosis, dyspnea and low blood pressure called for treatment, although the general appearance was healthy. Vinnis gave digitalis in large doses, aiming to make the pulse irregular, hoping to transform the tachyatria into auricular fibrillation. Then on complete suspension of the digitalis a normal heart action returns. This had been successful in about half the cases in which he had given this treatment, and it proved successful in this case also. The man was given a daily dose up to 400 mg. of pulverized digitalis. The pulse became irregular but there was no actual auricular fibrillation. The stomach rebelled against these large doses, and after a pause, the digitalis was given again up to 150 mg. In a few days, with an auricle beat of 280, the ventricle beat gradually settled down to a regular 70, and the general condition improved, the area of heart dulness grew less and there was no further dyspnea or cyanosis. When the rhythm had thus become a regular one-to-four beat, a dose of 120 mg. digitalis was enough to maintain it, except under emotional stress, when a one-to-two rhythm returned. These attacks of a ventricular 140 beat grew rarer, but finally one occurred of exceptional intensity and duration, and then the digitalis was completely suspended. When this attack subsided, the desired result had been accomplished, as the heart returned to a regular, normal rhythm, both auricle and ventricle presenting a regular 65 or 85 beat. This normal rate has persisted during the year to date, and the man has attended to his business without further disturbance. Vinnis calls attention to the case not only as a model of systematically planned and carried through treatment, but from a more general clinical point of view, as the patient felt that he was cured as soon as the rhythm had become the one-to-four beat. The physician did not regard it as a cure until the rhythm had become one-to-one, but the patient felt no inconvenience from the fourfold auricle beat, and he likewise seemed to feel no inconvenience from the absence of any influence on the heart from the central nervous system. The case teaches that a heart beat of 140 can last for three years without inflicting permanent injury on the heart. Also that an auricle beat of 280 may cause no subjective disturbance. Also that when the ventricle beat is within normal range, the absence of chronotropic nervous influences may not be felt.

133. **Sign of Latent Tetany.**—Bolten describes two cases, one patient a boy of 9, the other a man in the forties. Both were healthy and apparently sound except for a positive Erb reaction characteristic of tetany. In both the hair suddenly began to fall out. The man became entirely bald and lost also his eyebrows and the hair on his body. The boy's hair also dropped out suddenly, mostly from the back of his head. Both were in good health at the time and since. The falling of the hair is evidently a trophoneurosis, but in these cases latent tetany—parathyroid insufficiency—seems the primary cause.

Norsk Magazin for Lægevidenskaben, Christiania

January, LXXVIII, No. 1, pp. 1-120

134 *Gynecology at Christiania. (Kvindeklinikken i Kristiania.) K. Brandt.—p. 1.
135 *Case of Dwarfism from Achondroplasia. V. Magnus.—p. 58.
136 Case of Aphasia, Adiposis and Stunted Growth. C. Schiøtz.—p. 76.
137 *Cancer in Liver of One-Year Babe. T. Frølich.—p. 78.
138 *Calcium Deposits in Subacromial Bursa. J. R. Natvig.—p. 83.
139 *Symptoms, Diagnosis and Treatment of Acute Cholecystitis. N. Paus.—p. 89.

134. **The New Clinic for Women at Christiania.**—Brandt gives a historical sketch of gynecology at Christiania, and describes the newly finished women's clinic which is on the spacious parklike grounds of the public hospital. Thirty-one full page illustrations are given, and a number of floor plans, including the handsome residence built nearby, also on the grounds, for the physician in chief. In connection therewith, Brandt gives a historical outline of the development of obstetrics. Until Paré introduced podalic version in 1550, obstetrics had been left entirely in the hands of women. It was considered beneath the dignity of a professional man to have anything to do with the childbirth, and when he was summoned it was merely to prescribe for the mother or do embryotomy. As complications calling for these so often proved fatal, the physician's visit was usually held responsible, and it is easy to understand that the physician was a persona non grata at a childbirth.

135. **Achondroplasia Dwarfism.**—Magnus gives an illustrated description of a female dwarf, 22 years old, who showed remarkable tolerance for levulose, 100 gm. levulose for a weight of only 37 kg., nearly twice the usual amount tolerated by an adult weighing nearly twice as much. This and the exceptionally small sella turcica suggested that the dwarfism was the result of defective development of the hypophysis. The growth was apparently normal till the age of 9, when chronic bronchitis became installed. At 22 she applied for relief from intolerable headaches and was relieved by palliative trephining first on one side and then on the other. Magnus reviews the literature on dwarf growth, citing as the most important, the monograph on dwarfism recently issued by the Eugenics Laboratory at London.

137. **Cancer in Infant's Liver.**—Frølich quotes Philipp's compilation of eighty-seven cases of cancer in children; 46 per cent. were in the digestive tract. The number includes twelve cases of carcinoma of the liver; in two of this group the ages were 3 and 14 months. Merkel collected 111 cases, including thirteen with cancer of the liver; seven were in children under 10. Frølich then describes a case confirmed by microscopic examination after an exploratory laparotomy. The first symptoms were noticed when the babe was 9 months old, coming on in the midst of apparently perfect health, and proving fatal in five months.

138. **Deposit of Calcium in Shoulder Bursa.**—Natvig has encountered several cases of disturbances from a deposit of calcium in the subacromial bursa. In one case described in detail the young woman had pains now and then in both shoulders, growing progressively worse. Roentgenoscopy showed deposits of calcium in both subacromial bursae. Natvig has encountered three similar cases since. In three there had evidently been some inflammatory process in the bursa—in one case there was a history of a fall on the hand, and the woman had been in the habit of practicing on the piano up to five hours a day. The resulting necrosis had led to a deposit of calcium, or, possibly the deposit may have preceded the inflammation. The deposits of calcium do not necessarily induce pain; the discovery of the calcium shadow on the side free from pains may be a surprise. These calcium deposits were often taken for a gouty trouble; Stieda operated in a case of the kind and discovered the calcium deposit. The age ranged from 23 to 43 in Haenisch's twelve cases (1910). It is characteristic for this disorder for the pains to come on slight at first, and then, after an interval of from one to four weeks, they suddenly become very intense. The region around the greater tubercle or under the acromion was always tender, and the arm felt weak and active abduction was painful and difficult, although passive rotation was generally painless. Natvig's patients all were cured by conservative measures alone, fixation and sedatives; when there was much pain, moist heat and baths, and later gentle massage. In three of Haenisch's cases, under these conservative measures the shadow disappeared entirely in two, and in the other grew much smaller. He and others have seen cases in which the patients were subjectively cured although the calcium shadows were still evident. When the bursa was removed it usually showed a tendency to ossification.

139. **Acute Cholecystitis.**—Paus says that 20 per cent. of the patients with acute cholecystitis in the surgical ward at Christiania had a history of digestive disturbances, and 75 per cent. had had trouble with their gallbladder before the one compelling operative measures. Pains were a prominent feature in all his cases, varying from colic and pains localized in the right epigastrium and spreading to the back, shoulder, epigastrium and breast to a relatively slight sense of oppression. Rovsing had a case in which intense pain in the right shoulder was the only symptom of the acute cholecystitis. After removal of a gallstone there was no further pain. The pain may resemble that with angina pectoris. One of Paus' patients had pain only in the left side, spreading to the left shoulder, but the gallbladder was extremely sensitive to the touch. Another patient had not only the intense pains in the left side but the tender gallbladder was located also on the left side—a case of complete transposition of the viscera. There was vomiting in 31 per cent. of his cases, generally with no connection with the meals. In some cases the symptoms suggested ileus. There was no fever in some of his twenty cases, but as a rule the temperature ran up quite high and 22.5 per cent. had chills. The most characteristic sign is tenderness under the right costal arch. Jaundice was present in only 42 per cent. and was slight. Serous cholecystitis may develop with a stormy onset while the gangrenous form may run an afebrile course for a time, especially in the elderly. In his cases of cholecystitis in women, 60 per cent. were between 31 and 50, while in men 70 per cent. were between 41 and 60. With acute appendicitis 33 per cent. were under 15. Two of Bull's patients had both acute cholecystitis and acute appendicitis, and Paus has had a case of coincident acute gangrenous cholecystitis with gangrenous appendicitis. In one instructive case a man of 56 with a history of gallstone colics suddenly developed pains under the right costal arch. The pulse was normal and a mild cholecystitis was diagnosed. A day later there was collapse, pulse of 140 and death the next day from necrosis of the pancreas. The acute cholecystitis had probably brought on the pancreas trouble. Paus has had two cases in which both the gallbladder and right kidney were the seat of an acute infectious process. Cases are known in which fever and the symptoms on the part of the lungs and bronchi were repeatedly the only signs of gallbladder trouble, until finally a typical colic revealed the true source of the symptoms. Morphin may arrest the spasmodic contractions of the gallbladder musculature, and not only relieve the pain but allow the contents to escape, and the attack of cholecystitis is over at once. In thirty-two operative cases, five died of the twenty operated on during the attack. In the five fatal cases death was due to diabetic complications, intercurrent pneumonia or the gangrenous condition of the gallbladder. Phlebitis developed later in 10 per cent. of the cases, and complications on the part of the lungs in 10 per cent. Some of the patients might have recovered without the cholecystectomy, but they would have heard from their gallbladder again and again. On the whole, Paus' experience warns that operative intervention must not be delayed until gangrene has developed and the patient has lost strength. It is better to operate occasionally when not absolutely certain that it is a question of life and death, rather than to lose a patient from perforation. In any event, the patient should be inspected every two or three hours, and be in the hands of an experienced and watchful nurse in the interim.

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December, 1916, XLII, No. 4, pp. 1481-1712

140 *The Functioning of the Kidney with High Blood Pressure in the Elderly without Albuminuria. (Om njurarnas funktion vid hypertoni hos gamla utan albuminuri.) E. Wikner.—p. 1481.

141 *Polarization Apparatus for Determination of Color Sense. (Polarisationsanomaloskopet, en apparat för diagnostisk undersökning av färgsinnet.) G. F. Göthlin.—p. 1665.

140. **Causes of the High Blood Pressure in the Elderly Without Albuminuria.**—Wikner has been applying functional and other tests to 117 men and 75 women all over 50 and all free from albuminuria and mostly in good health. He found that the blood pressure averaged 141.1 in the 49 men between 50 and 60, and 142.1 in the 24 women of this age. It was 150.4 in both the men and the women in the sixties, while it was only 145.7 in the 24 men over 70, and 164.5 in the corresponding group of 27 women over 70. The average for men and women, taken together, shows a steady increase—141.4; 150.4 and 155.7—in these three decades. The possible causes of this steady rise in pressure are discussed in turn, in particular the share of the kidneys in the process, both in physiologic and pathologic conditions. Wikner precedes his report of his special findings in the various groups of cases with an analysis of the literature. His reports and tables fill 118 pages. The whole material is classified further according as the blood pressure was above and below 170. The final tabulation gives the findings when various tests were applied to the same person. Twenty-six were subjected to this special study; the findings are shown under seven headings, including day and night urine, residual nitrogen and elimination of nitrogen on a nitrogen-free diet, test intravenous injection of lactose, and the response to test intake of water. The night urine surpassed the day amount in persons with hypertonia, more often than in those with blood pressure below 170. The residual nitrogen ranged from 22 to 38.5 mg. to 100 c.c. of serum, average 32.8, in those with lower blood pressure; the range in those with high blood pressure was from 25 to 54.6, average, 36.2; and in those with high pressure plus albuminuria, from 31 to 76 with an average of 43. Strauss asserts that 35 is the extreme limit for normal conditions. Those persons with the higher blood pressure, without albuminuria, showed a somewhat slower elimination of lactose after a test intravenous injection. Also a somewhat lesser elimination of nitrogen after a nitrogen-rich test meal. It is possible that some latent weakness of the heart may cooperate in this lesser elimination of nitrogen. The research was done mainly at the Home for the Aged at Stockholm.

141. **Polarization Anomaloscope for Detection of Color Blindness.**—Göthlin's apparatus is described with illustrations. It tests the color sense with lights of different colors, alone or blended. It permits the exact graduation of the ability to recognize colors, and also diagnosis of tritanopia. The findings with 330 normal eyes are the basis for the classification in three grades which he calls protamblyopia, deuteramblyopia and tritamblyopia.